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THE LANDOWNER AND THE AIRCRAFT—1958

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ONE of the most pressing problems confronting the air transport industry today is noise. It is pressing from the technical standpoint because local airport authorities are imposing operating restrictions on the use of major airports by jet aircraft. It is pressing from the legal standpoint because the lines of legal responsibility of the air carrier operator are not yet well defined; the roles of the Federal and local authorities have not yet been clearly spelled out; and the area and extent to which the owner of land adjacent to an airport may have a cause of action is currently unpredictable.

Almost anyone connected with aviation will agree that the noise problem is a serious one for the airline, but because there have been only a few instances where the air carriers were individually, immediately, and directly affected, the principal attack on the problem has been to treat it on a case by case basis.

Yet the problems created by air carrier noise are peculiarly incapable of solution by the courts alone. In the absence of a firm holding by the Supreme Court that no cause of action of any kind can exist on the part of any landowner in respect of noise created by a properly operated aircraft flown in accordance with the air traffic rules, the possibility of ham-stringing injunctions, constant litigation, and damaging verdicts will continue unless a Constitutionally sound national program is adopted to solve the problem. Even where a given case is won, the victory may be only transitory. Of what good to the carrier is winning the *Cedarhurst litigation*[1] if the Port of New York Authority can restrict jet operations to daylight hours, and impose preferential runway requirements[2] and maximum weight limitations[3] for the same

[1] Allegheny Airlines, et *al.* v. *Village of Cedarhurst*, 238 F. 2d 812.

[2] See *Aviation Daily* for Oct. 7, 1958, p. 305B. The Port Authority disclaimed any conflict with CAA (*Aviation Daily* for Oct. 10, 1958, p. 343), but see *Aviation Daily* for Oct. 13, 1958, p. 348.

[3] See *Aviation Daily* for Oct. 28, 1958, p. 482.

reasons that the Cedarhurst ordinance was enacted?[4] What is the good of a favorable decision in the Federal District Court in the *Newark Airport*[5] case, when the Court of Claims, some months later hands down a decision[6] based upon a principle which if followed would invalidate the *Newark* holding at least in part?

It is submitted that the problem of noise is a national problem and one that must be dealt with on the national level. It is the purpose of this paper to explore such a possibility and the extent to which adequate legal machinery already exists to accomplish that end.

The Four Principals

Before discussing the possibilities of a uniform federal system governing liability for aircraft noise, it is only prudent to review briefly the four categories of litigants which may be involved in a landowner-air carrier suit based on noise. These principals would appear to be (1) the air carrier noise maker (2) the landowner (3) the federal government and (4) the State or local governmental authority in both its regulatory and airport proprietary capacities.

Each of the principals has cross-relationships with the other three—and these cross-ties must be considered in dealing with the noise problem. The air carrier is licensed by and conducts its operations under the control and direction of the federal government. It operates into airports under contract or other arrangements with the local airport authority—which in almost all instances today is a public or quasi-public authority. Lastly it may or may not infringe upon the landowner's rights.

The landowner is frequently, if not generally, a taxpayer of the community where the airport is located. He is protected by both the Fifth and Fourteenth Amendments of the Constitution against depriva-

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[4] On Oct. 10, 1958, Donald V. Lowe, Chairman, Port of New York Authority, sent a telegram to the President reading in part as follows:

"As you know, Mr. President, Commissioners of the Port Authority, in full recognition of their public responsibilities, have imposed certain mandatory runway, altitude and power restrictions upon the use of International Airport by these commercial jet aircraft, subject, of course, as we have previously stated, to requirements of CAA air traffic control procedures.

I am taking the liberty of sending you by hand copies of the studies and findings of our acoustical engineers with respect to jet aircraft noise at International Airport. I am also sending you a copy of our press release through which we advised the people of the measures taken by the Port Authority to protect their interest in connection with the noise of jet aircraft in the neighborhood of the airport.

I regret, Mr. President, that it is necessary for the Port Authority immediately to advise the people of Long Island that General Quesada's remarks in no way reflect any change in Port Authority policy. Our Executive Director and our Director of Aviation attempted to meet with General Quesada at International Airport to advise him fully on the grievous jet aircraft noise problem which has prompted the adoption by our Commissioners of jet aircraft flight restrictions at the airport."

[5] *City of Newark, New Jersey, et al.* v. *Eastern Airlines, et al.*, D.C. N.J. 1958, 159 F. Supp. 750; 1958 U.S. & C.A.R. 30.

[6] *Highland Park, Inc.* v. *The United States*, C.Cls. No. 375-55, May 7, 1958; 167 F. Supp. 597.

tion of his property without due process of law, and if either federal or local government so deprives him, he has the right to object.

The federal government is the regulatory authority over interstate air commerce and the sponsor and endorser of air carriers. Its air traffic rules are supreme, and inconsistent regulatory enactments of local authorities must fall by the wayside.[7] In addition, it is a contractor under the Federal Airport Act with local authorities having jurisdiction over most of the airports of the country served by air carriers. Thus its relation in respect of the local airports is twofold—intergovernmental and contractual. In regard to many landowner suits against air carriers the federal government may stand as umpire, but where it is itself the operator of aircraft (and it is by far the largest operator), it may be the defendant.

The local airport authority is now almost invariably a contractor with the federal government, and as such must have given assurances that the airport to which the contract relates will be available for public use on fair and reasonable terms and without unjust discrimination.[8] In addition the airport itself is a potential defendant in nuisance suits.

The Problem

The noise problem is one that has gradually evolved from a more complex one, where disturbance by lights and fear for personal safety were also elements. Noise has now become the primary factor, and will undoubtedly continue to be. Two developments are responsible for this: the first is the increased power of aircraft engines, larger propellers, and currently, the introduction of jet aircraft. These developments not only increase the noise-making potential of present day aircraft over the older DC-3, but this may increase since turbine power possesses a penetrating quality not present in reciprocating engines.[9]

The second reason that the problem has distilled into one of noise alone is that aviation has become so safe with respect to third persons on the ground there is no longer any cause for legitimate concern. No doubt there is fear still present in the minds of landowners, but statistics show that overflight of aircraft constitute no true menace to the safety of the citizen on the surface. For example, during the year 1956, the Civil Aeronautics Administration reports 6,553,336[10] air carrier movements for CAA-controlled airports. However, in that year there was not a single person killed on the ground in the entire United States by air carrier aircraft crashing.[11] And over the past five years there has been only one person killed on the ground by a crashing air carrier plane. When it is considered that the air carrier industry in the United States is now the prime public mover of intercity passengers, hauling

[7] *Allegheny Airlines, et al.* v. *Village of Cedarhurst, supra,* note 1.

[8] Federal Airport Act, Sec. 11, 60 Stat. 176, 49 U.S.C. 1110.

[9] See *Highland Park* v. *U.S., supra,* 161 F. Supp. 597, 599.

[10] *CAA Statistical Handbook of Civil Aviation,* 1957 Ed., p. 22.

[11] Source, CAB Bureau of Safety, Analysis Division.

more of such traffic than either the rails or the buses,[12] these statistics are truly remarkable. The danger to innocent third persons created by buses and trains is incomparably greater.[13]

The Solutions

The basic solutions to the problem of aircraft noise appear to be three (a) eliminate or cut down the noise at its source (b) put the airplane further away (c) tolerate the noise but decide who is to pay the costs for the economic loss.

I.

Developmental

The first solution is obviously developmental, and the extent to which such a program can be successful is not now known. But the question remains: who is to pay the costs for development—the air carriers, who will pass the costs along to the flying public, or the nation at large, by having the federal government assume that responsibility. This decision is one of fundamental policy, but it is one which has in essence already been made. The Civil Aeronautics Act of 1938 was a developmental statute, based on the proposition that the nation as a whole had such an interest in the development of a sound air transportation system that air carriers should be subsidized. The encouragement and development of civil aeronautics was one of the cornerstones of this Act.[14]

The Federal Aviation Act of 1958[15] carries forward this policy with greater emphasis. The new act repeats in Sec. 305 the earlier provision that the "Administrator is empowered and directed to encourage the development of civil aeronautics and air commerce in the United States and abroad." In Section 306 the Administrator is directed to give full consideration to requirements of national defense, of commercial and general aviation, *and to the public right of freedom of transit through the navigable airspace.* (Italics supplied.) In this connection, the earlier definition of navigable airspace has been modified to include "airspace needed to insure safety in take-off and landing of aircraft." (Sec. 1 (24)). What good is a right of freedom of transit if the aircraft necessarily makes so much noise that transiting the airspace gives rise to damage suits based on nuisance and to local airport restrictions designed to alleviate the effect of the noise? Moreover the Administrator is now required to adopt air traffic rules, among other purposes, for the protection of persons and property on the ground (Sec. 307 (c)). This undoubtedly includes protection of property from

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[12] See CAB Press Release 58-6, Jan. 30, 1958.

[13] Compare, however, opinion of Judge Hartshorne, D.J. in *Prentus* v. *National Airlines*, 112 F. Supp. 306 (D.C.N.J., 1953) holding aviation is an ultra hazardous activity. *Contra. D'Aquilla* v. *Pryor*, 122 F. Supp. 346 (S.D.N.Y., 1954).

[14] Civil Aeronautics Act of 1938, Sec. 2(f).

[15] Public Law 85-726, 85th Congress, 2nd Session, S. 3880, signed Aug. 23, 1958; 72 Stat. 731, effective Jan. 4, 1959.

damage directly and immediately caused by aircraft noise. But flight patterns prescribed for aircraft in order to protect landowners from noise may be directly contrary to the most efficient use of airspace, which is is also enjoined to promote.

The foregoing factors lead directly to the Administrator's powers of developmental planning under Sec. 312.

Paragraph (b) of Section 312 bears repeating in full:

> "(b) The Administrator is empowered to undertake or supervise such developmental work and service testing as tends to the creation of improved aircraft, *aircraft engines*, propellers, and *appliances*.[16] For such purpose, the Administrator is empowered to make purchases (including exchange) by negotiation, or otherwise, of experimental aircraft, aircraft engines, propellers, and appliances, which seem to offer special advantages to aeronautics." (Italics supplied.)

Thus it is absolutely clear the Administrator has the power to undertake developmental work on aircraft silencing systems. Moreover, self-interest on the part of the government, as the largest operator of jet aircraft, dictates that immediate steps be taken before the endless procession of landowner cases before the Court of Claims against the Air Force raises hob with the national debt.

II.

Regulatory

The second solution to the noise problem is regulatory in the sense that flight patterns may be prescribed which tend to minimize the effect of noise on the surface. Reference has already been made to the new power of the Administrator under Sec. 307 (c) to prescribe regulations governing the flight of aircraft for the protection of persons and property on the ground.

This new power is a substantial departure from that formerly enjoyed by the Civil Aeronautics Board under the old Civil Aeronautics Act. In that Act, the Board's power was related to "safety of flight in air commerce" (Sec. 601 (a)). The theory was that safety of those on the ground was obviously a concomittant of safety in the air — and of course it is, so far as physical impact is concerned. This was underscored by the further power possessed by the Board to prescribe rules for the prevention of collisions between aircraft and land or water vehicles (Sec. 601 (a) (7)). But aircraft can be flown in perfect safety and comfort to those aboard while raising the noise of all the furies outside. Consequently, it is submitted that the Board never had jurisdiction to protect the landowner's property from deterioration in value through

[16] An aircraft engine includes "all parts, appurtenances, and accessories other than propellers" Sec. 101(6). Appliances are "instruments, equipment, apparatus, parts, appurtenances, or accessories of whatever description, which are used, or are capable of being or intended to be used, in the navigation, operation, or control of aircraft in flight . . . and which are not a part or parts of aircraft, aircraft engines, or propellers" (Sec. 101(11)). Silencers would be either one or the other.

aircraft noise. The program heretofore carried on by the C.A.A. to develop traffic patterns around airports so as to minimize the effect of noise on the local residents while salutary, was more an example of air carrier-C.A.A.-local airport cooperation than an exercise of valid regulatory power.

Thus, the Administrator of the new Federal Aviation Agency will have full regulatory power to deal with flight patterns in the interest of property owners as well as of air commerce. These flight patterns can involve not only the track of the aircraft over the surface but also the angle of climb and descent that must be made good. The present Civil Air Regulations (14 Code of Federal Regulations) now place limitations on air carrier aircraft in order to insure that there will be adequate one-engine out performance to meet emergencies in take off. At some airports under certain conditions of wind and temperature, these limitations cut the allowable load well below the certificated gross weight. See C.A.R. Sec. 40.70 et seq. What is there to prevent the Administrator, with his new authority, from prescribing on the same basis, the angle of climb to be made good in the interests of a fast climb out at a steep angle to protect landowners? This power if exercised without proper restraint, could have a most adverse effect on air carrier operations.

Who else has the regulatory power to protect landowners from aircraft noise? The *Cedarhurst*[17] case is authority for the fact that no state or local government has regulatory power *per se* since the federal government has occupied the field and is supreme under the interstate commerce clause.

There are two other approaches, essentially regulatory in nature, which have been used by local authority to reach the same ends.

Conditions Imposed by Airport Authorities

One of these approaches is that used by the Port of New York Authority with respect to jet aircraft operation. This Authority has required each model jet sought to be operated by air carriers and foreign air carriers to undergo noise test before it would give permission for the use of such aircraft at Idlewild. It has conditioned its permission on the use of certain runways, limited jet operation to certain hours of the day, and prescribed the maximum fuel loads.[18]

We can be sympathetic with the problems that confront the local authorities, but the course of action initiated by New York can soon lead to nationally disastrous results. If New York can impose flight restrictions on the use of its airport which are not directly related to the surface use of the facility, so can every other municipality in the country for reasons which in its unilateral judgment are good and sufficient. If New York can do this for jet aircraft, why cannot the

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[17] *Allegheny Airlines, et al.* v. *Village of Cedarhurst, supra,* note 1.
[18] See *Aviation Daily* for Oct. 28, 1958, p. 82, *supra* Note 3.

Airport Board of Podunk put preferential runway restrictions on operations and prescribe traffic patterns for all aircraft in order to avoid over-flying the mayor's house. It is submitted that the action of the Port of New York Authority in this instance is just as inimical to aviation and air transportation as the Cedarhurst ordinance.

Admittedly the Port Authority owns or controls the New York City Airports. If it were a private individual or corporation it could place whatever restrictions it chose on the use of the land, reasonable or unreasonable, connected with the land's use as an airport or not.

However, it is not a private corporation. It is a public authority, created as such by the States of New York and New Jersey, and contracting as such with the federal government under the Federal Airport Act. Substantial federal aid was given it under that Act on the basis that its airports will be available for public use on fair and reasonable terms and without unjust discrimination (Federal Airport Act, Section 11 (1)).

As a public landowning corporation, it undoubtedly could impose conditions on the use of its airports directly related to the airport itself—it could limit the maximum weight per aircraft wheel in the interests of preserving its runways; it could prohibit operation of aircraft on the airport when these cannot safely be conducted. But here it is placing conditions and restrictions on the use of the airport *in the interests of surrounding landowners.* (Certainly it cannot be said that the imposition of the conditions on jet operations is for the benefit of the public coming to the airport!)

In so doing, it is submitted that the Port Authority is exercising a governmental function, not a proprietary one, and as such its regulations and restrictions are in the same category as the Cedarhurst ordinance. The purpose of the Authority's conditions and Cedarhurst's ordinance are the same in that both seek to regulate the traffic patterns around Idlewild in the interests of the local citizenry, and both invade a field which the federal government has fully occupied. True, the sanctions are different but the compulsion is there to observe the requirements. In one case a penalty is imposed for violation; in the other case the privilege of landing at the airport would be withdrawn.

An unconstitutional governmental objective cannot be achieved merely by dressing up the sanction, and the withdrawal of a privilege otherwise accorded is just as much a penalty as the imposition of a fine.[19]

It is submitted that the Idlewild conditions on Pan American's and BOAC's jet operations are unconstitutional invasions of the federal government's preserve, and as such they cannot be "reasonable terms" within the meaning of the Federal Airport Act.[20]

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[19] See *Carter* v. *Carter Coal,* 298 U.S. 238; 56 S. Ct. 855; 80 L. Ed. 1160 (1936). (Rebate of a tax to coal producers who would "agree" to the Federal Bituminous Coal Code.)

[20] "The airport to which the project relates will be available for public use on fair and reasonable terms." Federal Airport Act, Sec. 11(1).

COURT INJUNCTIONS

One further way in which regulatory action has been attempted on the local level is the court injunction.[21] This will be referred to in detail under Part III of this article when the *Newark Airport* case is discussed. But mandatory injunctions are regulatory in nature, and should be mentioned here to bring them into proper relationship with other local regulatory activities.

A mandatory injunction issued at the behest of a private litigant presupposes a private right. In the case of a landowner the right is primarily local and must therefore be derived from the State. Federal courts, except in matters governed by the Constitution or federal statutes are bound to apply the local law. *Erie R. Co.* v. *Tompkins,* 304 U.S. 64, 58 S. Ct. 817 (1938). Thus whether the landowner's rights are created by State statute or by common law both state and federal courts will apply the same law.

Confining ourselves for the moment to the private right, created by state law, of a landowner to enjoin overflight of his property below certain altitudes, it is obvious that if the injunction should have the effect of imposing a minimum altitude of flight above that prescribed by the Civil Air Regulations (floor of the navigable air space), it would be in direct conflict with the federal power to enact air traffic rules, and particularly contrary to Section 307 (a) of the Federal Aviation Act of 1958 which vests in the Administrator the power and duty to: "assign by rule, regulation or order the use of the navigable air space under such terms, conditions, and limitations as he may deem necessary in order to insure the safety of aircraft and the efficient utilization of such air space."[22]

Thus there would be a conflict between state-created private rights and the federal law. It is now clear that in the event of such conflict, the federal law is supreme, *Garner* v. *Teamsters, Chauffeurs and Helpers, etc.,* 346 U.S. 485; 74 S. Ct. 161 (1953). In that case, the Court, speaking through Mr. Justice Jackson, said (74 S. Ct. 161, 171):

> "We conclude that when federal power constitutionally is exerted for the protection of public or private interests, or both, it becomes the supreme law of the land and cannot be curtailed, circumvented or extended by a state procedure merely because it will apply some doctrine of private right. To the extent that the private right may conflict with the public one, the former is superseded. To the extent that public interest is found to require official enforcement instead of private initiative, the latter will ordinarily be excluded. Of course, Congress, in enacting such legislation as we have here, can save

[21] See *Greater Pittsburgh Airport Case* (Second Opinion), 114 A. (2d) 491; 1955 U.S. and Canadian Av. Rep. 409; *Hyde et al.* v. *Somerset Air Service, Inc., et al.,* 1948 U.S.C.A.R. 601; *Burnham* v. *Beverly Airways, Inc.,* 311 Mass. 628, 1942 U.S.C.A.R. 1.

[22] Although Section 1106 of both Acts preserves existing common law and statutory remedies, this provision must give way to the overriding provisions of the statute. See *Adams Express Co.* v. *Croninger,* 226 U.S. 491; 33 S. Ct. 148; *S.S.W., Inc.* v. *Air Transport Association of America,* 199 F. 2d 658; and *City of Newark, et al.* v. *Eastern Airlines, et al., supra,* Note 5.

> alternative or supplemental state remedies by express terms, or by some clear implication, if it sees fit."

Labor litigation is a prolific source of authority for the proposition that state courts, enforcing state statutes or applying state common law may not enjoin that which the federal government, acting under the commerce clause, has preempted. This is true even though the motive for the state action is to protect a different policy than the federal statute. Thus, the Court in *Weber* v. *Anheuser-Busch, Inc.*, 348 U.S. 468; 75 S. Ct. 480 (1955) discussed the various holdings in the field of labor relations and stated with respect to the differing reasons for action:

> "Respondent argues that Missouri is not prohibiting the IAM's conduct for any reason having to do with labor relations but rather because that conduct is in contravention of a state law which deals generally with restraint of trade. It distinguishes Garner on the ground that there the State and Congress were both attempting to regulate labor relations as such.
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> "We do not think this distinction is decisive. In Garner the emphasis was not on two conflicting labor statutes but rather on two similar remedies, one state and one federal, brought to bear on precisely the same conduct.
>
> "And in Capital Service, Inc., v. National Labor Relations Board, *supra*, we did not stop to inquire just what category of 'public policy' the union's conduct allegedly violated. Our approach was emphasized in United Construction Workers v. Laburnum Construction Corp., *supra*, where the violent conduct was reached by a remedy having no parallel in, and not in conflict with, any remedy afforded by the federal Act."

It is submitted that these holdings make it amply clear that once the federal government has preempted the field as in the case of the control of the flight of aircraft, the remedy of mandatory injunction based on a state cause of action is no longer open at least to the extent that the injunction conflicts with the paramount federal authority.

There is, of course, the *caveat* that the federal act must be within the constitutional power of the government. It is axiomatic that the federal government may not, without paying just compensation, take private property for public use. But abolition of the remedy of conflicting mandatory injunction is certainly not in itself such a taking of property as to make it unconstitutional, *Weber* v. *Anheuser-Busch, supra.* Consequently, whether or not a right of action for damages exists for nuisance which is not sufficiently serious to involve a taking, it may not be enforced by injunction, if the injunction impinges on the navigable air space.

At the thresholds of airports under both the Civil Aeronautics Act of 1938, as interpreted by the Board, and the more specific language of Section 101 (24) of the Federal Aviation Act of 1958, the navigable air space slants downward to the ground, and undoubtedly in some instances may intercept the "immediate reaches" above the adjoining land of neighboring property owners.

Here again it is questionable whether the injunctive process is open to the injured landowner in a suit either against the government or the noisy airline. The new act should be given a chance to be constitutionally applied. As heretofore pointed out, the Administrator is authorized and directed to prescribe regulations governing the flight of aircraft "for the protection of persons and property on the ground." Protection of property must mean protection against a taking either by way of nuisance or trespass. It is not to be assumed that the Administrator will ignore that mandate in fixing or revising airport approach patterns. There are, however, many ways in which he may be able to solve the problem—by prescribing different traffic patterns, by ordering higher final approaches and steeper climbs after take-off, by negotiating with local communities for obtaining necessary easements through the air space involved, or by enforcing existing contractual commitments under the Federal Airport Act. Under Section 11 (3) of that Act, the project sponsor must have assured the Administrator of Civil Aeronautics in writing that:

> "(3) the aerial approaches to such airport will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting *or otherwise mitigating existing airport hazards and by preventing the establishment of future airport hazards.*"

"Airport hazard" is defined in the Act as meaning

> "any structure or object of natural growth located on or in the vicinity of a public airport, or any use of land near such airport which obstructs the air space required for the flight of aircraft in landing or taking off at such airport or is otherwise hazardous to such landing or taking off of aircraft." (Section 2(4)).

Thus, a structure or tree which penetrates into the approach path must be removed. Presumably use of neighboring land as a place for burning rubbish would be foreclosed, if such use thereby diminished visibility. Is it not an equal hazard for land to be used in such a way that constitutional guarantees require that the approaches be elevated to avoid a taking of property. Where such elevation impinges upon the safety of normal flight operation, the use of the land for a purpose which aircraft noise would adversely affect is just as much a hazard to safe operation at the airport as having to clear a tree or high tension wires.

Thus there are many ways in which the Administrator will be able to solve the problem of the landowner whose property is taken or threatened to be taken. Since this is so the doctrine of primary jurisdiction will obviously apply[23] to throw the matter to the Administrator in the first instance.

Admittedly, the doctrine of primary jurisdiction has been rejected in the past—insofar as equity power to enjoin a continuing trespass is concerned. In the *Greater Pittsburgh Airport Case* (Second Opinion)

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[23] *City of Newark, et al.* v. *Eastern Airlines, et al., supra,* Note 5; 159 F. Supp. 750, 759.

114 A. (2d) 491; 1955 U.S. and Canadian Aviation Reports 409 (May 1955) the court specifically refused to apply the doctrine.

However, this case, and those upon which it relies, were decided before the enactment of the 1958 act, which should definitely affect the outcome. First, the new Act amended the definition of "navigable air space" to "include air space needed to insure safety in take-off and landing of aircraft." This, without doubt, is a more far reaching definition than the former interpretation No. 1 to Part 60 of the Civil Aeronautics Board, which regulated the subject in 1955. The Board in that interpretation had decided that the *necessary* flight paths of each aircraft on take-off and landing established the lower limit of the navigable air space in respect of the specific operation concerned. Thus flight at any lower altitude than necessary for the particular operation would be below the navigable air space, and consequently outside the realm of federal jurisdiction.

With the new amendment, it is obvious that the Congress intended to exercise jurisdiction below that proclaimed by the Board, and down to the obstruction clearance line. In other words it lines up the federal jurisdiction over air space in the Federal Aviation Act with the removal of airport "hazards" under the Federal Airport Act.

Insurance of safety in take-off and landing requires a buffer zone of air space between obstacles on the ground and the usual flight paths followed by aircraft on take-off and landing, and this buffer zone is now proclaimed to be part of the public domain. Thus what was not federal at the time of *Greater Pittsburgh* now becomes so, and the new Administrator is charged not only with safety of flight in air commerce but the protection of property rights of landowners as well.

To summarize the "regulatory" portion of this article, the federal government has fully occupied the field of aircraft flight regulation; that this fact bars action on the state or local level in respect of aircraft operating in conformity with the Administrator's regulations, whether it be by legislation, city ordinance, airport authority condition, or court decree, and this is true whether or not there is a taking involved.

III.

The third solution to the noise problem mentioned at the beginning of this article was "tolerate the noise." Admittedly, this is not a solution at all, but it is essential to go into the question of who is to foot the bill in cases where neither developmental nor regulatory functions eliminate the problem, as well as to determine the circumstances under which landowner recovery is to be had. This brings us to a consideration of certain cases handed down by the courts in 1958.

The first of these is the *City of Newark, New Jersey, et al.*, v. *Eastern Airlines, Inc., et al.*[24] The case was brought by three cities, two townships, six individuals, and the Newark Airport Mayors' Committee,

[24] *Supra*, Note 5.

Inc., a New Jersey corporation, against seven airlines, the Port of New York Authority, the United States of America, and the Civil Aeronautics Authority. At the close of the plaintiffs' case, defendants moved to dismiss, and the court's opinion is on this motion.

The opinion disposed of two counts in the amended complaint, the first to enjoin the airborne operations of the defendant airlines to and from Newark Airport, to the extent that such operations constituted a public and/or private nuisance, specifically that defendants be restrained from flying below 1200 feet from the ground over regions where the plaintiffs reside. The second count was to enjoin such operations and to award damages therefore to the extent that they constituted a trespass on the properties of the plaintiffs. A third count against the Port of New York Authority and the United States to compel them to acquire by condemnation the properties of the plaintiffs was earlier dismissed.

In deciding the motion for the defendant airlines on both subsisting counts, the Court discussed the authority under which each defendant operated—its certificates of public convenience and necessity—its air carrier operating certificate and the operations specifications attached thereto.

After a preliminary recital of the facts, the Court went in detail into the power of the Civil Aeronautics Board to enact rules for minimum safe altitudes of flight, the rules actually adopted by the Civil Aeronautics Board, and the effect of these rules, citing *United States* v. *Causby,* 328 U.S. 256, and *Allegheny Airlines* v. *Village of Cedarhurst,* 238 F. 2d 812 (2nd Cir. 1956). The Court, following *Cedarhurst,* held that the federal regulatory system has preempted the field of safety regulation below as well as above a thousand feet from the ground.

In dealing with the issues of private nuisance under the first count of the complaint, the Court held in effect that for a Court, by judicial decree, to raise the minimum altitudes prescribed by the Civil Air Regulations and to establish flight patterns peculiarly applicable to each major airport would be an unwarranted interference with the regulatory power vested in the Civil Aeronautics Board by Congress and would result only in an unseemly conflict between the administrative agency and the Court. Furthermore, the Court pointed out that such a piecemeal approach if followed in the case of each major airport —of which there are 194—could completely destroy the uniformity contemplated by the Civil Aeronautics Act.

In view of this, the Court held that since the Board had ample power to review the questions presented in this count, the Court should apply the doctrine of primary jurisdiction and dismiss it, leaving the plaintiffs to their remedy before the Civil Aeronautics Board as petitioners for the issuance or amendment of a rule or regulation governing minimum safe altitudes. In so doing the Court stated:

> "If, on petition of plaintiffs and after investigation and hearing, the Civil Aeronautics Board amends either the present regulations or the operations specifications, or both, a further resort to this court will be clearly unnecessary."

With respect to the claims for trespass set forth in the second count of the complaint, the Court dealt separately with each plaintiff, but in the end dismissed the count as to each one. Before doing so, however, the Court discussed the *Causby* case and derived from that case a general principle which it stated as follows:[25]

> "There must be evidence not only that the aircraft passed over his lands from time to time but also that there was unlawful invasion of the immediate reaches of his land; in other words, there must be evidence that the aircraft flights were at such altitudes as to interfere substantially with the landowner's possession and use of the air space above the surface."

Thereafter, the Court dismissed the trespass claims of the various plaintiffs for injunction on a number of differing grounds. The claims of the City of Elizabeth and the Townships of Hillside and Union were dismissed because the record was completely devoid of any evidence that any planes invaded the immediate reaches of any specific lands of which these municipalities were the owners.

The claim of the City of Newark was dismissed because—although there was evidence that aircraft passed over a city high school—there was no evidence that these aircraft were at altitudes below the navigable air space and within the superadjacent reaches above the land. Furthermore, there was no evidence that the planes passing over were those of any one or more of the defendants.

The claim of the City of Linden was dismissed because of its failure to answer interrogatories propounded by the defendants.

As to the individual complainants, the complaints of four were dismissed as to the trespass count because they offered no evidence at all with respect to such claims. The trespass complaint of a fifth individual was dismissed on the ground that she was not the real party in interest —the land to which the claim related belonged to her mother rather than to her.

The claim of the sixth individual was dismissed as to the trespass count because, although the airplanes were identified as belonging to the defendants, there was no evidence which would support a determination that the aircraft passed below the navigable air space and within the immediate reaches of the land.

The trespass counts not only asked for an injunction but for damages as well. With respect to all but one of the plaintiffs, the claims for damages for past trespasses were dismissed on the merits (159 F. Supp. 750, 762). However, with respect to the damage claims of one Jay, the Court dismissed on jurisdictional grounds, because the only evidence

[25] 159 F. Supp. 750, 760.

of damage adduced by the plaintiff was a cracked wall[26]—damage which the Court held could not exceed $3,000. The Court did not discuss the jurisdictional basis for the injunction by this plaintiff, which presumably was over $3,000,[27] and therefore was confronted by a situation where the injunction aspect of the claim exceeded the jurisdictional amount, but the damages which had already been incurred did not. In such a split situation, it has been held that the Federal courts have jurisdiction to grant not only the injunction but the past damage as well.[28] If the Court has jurisdiction to award damages in such a situation, it clearly should have jurisdiction to dismiss the damage claim on the merits, and it is therefore submitted that the Court was in error in failing to do so.

However, as the case now stands, there is no doubt that it is a singular victory for the airlines involved and for air transportation in general. Nevertheless, certain elements in the decision raise questions as to the vitality of the opinion as a force in the ironing out of air carrier-landowner controversies.

The opinion rightly and forcefully sets forth the reasons why the matter contained in the nuisance count is in the primary jurisdiction of the Civil Aeronautics Board—soon the Administrator of the F.A.A. In one respect, however, this action by the Court merely delays the solution. The question remains: what action, if any, will be required by the new Administrator to take care of complaints in this count?

If the landowners are asking no more than that the defendant airlines follow the recommendations of their own National Air Transport Committee—(See Opinion, 159 F. Supp. 753), and if the airlines concur in the substance of these recommendations, and they appear reasonable and safe to the Administrator, there is, of course, no reason why he should not promulgate them as rules. But suppose that the Administrator finds that the imposition of such requirements would bring about an unsafe condition, and that the currently effective flight patterns at Newark are the only ones which meet aviation's needs. How far must the Administrator take into account the complaints of the New Jersey residents? And if the Administrator does not modify the requirements, are the airlines liable in damages to the residents for continuing to fly the prescribed patterns? In other words, as a matter of substance are the complainants entitled to any relief on the basis of the facts stated?

It is submitted that if no adjustment in flight altitudes and patterns is feasible—either from the point of view of safety or the efficient handling of air commerce, the carriers would be protected in continuing the present patterns, and as to the landowners, the annoyance caused

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[26] Jay testified it was his ceiling which cracked. See 159 F. Supp. 750, 760.

[27] The court correctly considered the count for injunction on the merits. id. pp. 761, 762. See *Fidler* v. *Roberts*, C.A.A. Ill. 1930, 41 F. 2d 305; *Colony Coal & Coke Corporation* v. *Napier*, D.C. Ky. 1939, 28 F. Supp. 76.

[28] *Pennsylvania R. Co.* v. *City of Girard*, C.A. 6, 1954, 210 F. 2d 437. See also *Peoples' T. & T. Co.* v. *East Tenn. Tel. Co.*, Tenn. 1900, 103 Fed. 212, 43 C.A.A. 185.

by noise is *damnum absque injuria.* The factual and legal situation lines up as follows:

A. *Defendants Not Trespassers*

1. The court found no evidence that any of the defendant airlines passed within the immediate reaches of the land of any plaintiff, (159 F. Supp. 750, 762).

B. *Defendants Compelled to Operate into Newark*

2. By the stipulated facts "each flight to or from Newark Airport by each of the defendant airlines was operated pursuant to the requirement and authorization of one or more certificates of public convenience and necessity issued by the Civil Aeronautics Board. Each flight to or from Newark Airport was operated in the manner prescribed by the Civil Aeronautics Act, the Civil Air Regulations of the Civil Aeronautics Board, the Air Navigation Regulations of the Civil Aeronautics Administration, and Operations Specifications annexed to the Air Carrier Operating Certificates issued to said defendant airlines by the Civil Aeronautics Administration. Each flight to or from Newark Airport by each of the defendant airlines was, while approaching, landing at, taxiing on, taking-off from and departing from Newark Airport, under the control of an air traffic controller appointed by the Civil Aeronautics Administration and was operated in accordance with instructions received from such controller." (159 F. Supp. 750, 754, 755.) Our hypothesis is that these procedures cannot be changed either for reasons of safety or efficiency.

3. It was the fact, although not mentioned by the court, that each of the defendant air carriers was authorized by its certificate of public convenience and necessity to carry the mail.

4. It is the duty of every air carrier to provide and furnish interstate and overseas air transportation, as authorized by its certificate (Civil Aeronautics Act, Section 404, Federal Aviation Act, Section 404).

5. No air carrier can abandon any route or part thereof for which a certificate has been issued by the Board without Board approval (Civil Aeronautics Act, Section 401 (k), Federal Aviation Act, Section 401 (j)). Nor may it, without such approval, suspend service at any point it is authorized to serve (Section 205.5 of the Board's Economic Regulations).

6. Air carriers, authorized to carry the mail, must transport it whenever required by the Postmaster General (Civil Aeronautics Act, Section 401 (m), Federal Aviation Act, Section 401 (l)). Schedules must be filed with the Postmaster General (Civil Aeronautics Act, Section 405 (e), Federal Aviation Act, Section 405 (b)), who may designate any such schedule for the transportation of mail (id.). It is understood as a matter of fact that he has designated them all for such carriage. No change in these schedules may be made without ten days'

notice to and approval of the Postmaster General, whose order is subject to review by the Civil Aeronautics Board (id.).

7. All "air routes" which are now or hereafter may be in operation are established post roads (Act of June 8, 1872, as amended by Civil Aeronautics Act of 1938, Section 1107 (a)).

8. The Economic Regulations of the Civil Aeronautics Board provide that air carriers may not change the airport through which they serve a certificated point except with the approval of the Board (Economic Regulations, part 202.3). Thus air carriers, compelled to serve Newark by reason of their certificates and the Civil Aeronautics Act, and soon the Federal Aviation Act, must do so through the Newark Airport unless the Board approves a change.

9. Violation of Title IV of the Civil Aeronautics Act or of any regulation thereunder is punishable by criminal fine (Civil Aeronautics Act, Section 902). The same will be true under the Federal Aviation Act.

10. There can be no doubt, in light of the foregoing, that the federal government has used its full powers to compel service into and out of Newark Airport by the defendant air lines, and in view of the stipulation, each flight so operated by the defendants was operated under such compulsion.[29]

C. *Application of Law to Facts*

11. All air space, apart from the immediate reaches above the land, is part of the public domain. *United States* v. *Causby,* 328 U.S. 256, 266, 66 S. Ct. 1062, 1068 (1946).

12. Not only were all flights thus in the public domain, but they were in the navigable air space as well. (Stipulation.) It is therefore unnecessary in this case to go into the question of the status of an aircraft in cruising flight which flies below the 1000-foot minimum altitude specified for built-up areas but above the immediate reaches of the land.[30] While we may admit that the cruising airplane is committing an illegal act, the one landing or taking-off is not.

D. *Railroad Precedents*

13. It remains but to apply the case of *Richards* v. *Washington Terminal Company,* 233 U.S. 546, 34 S. Ct. 655 (1913). There the Supreme Court held that damage caused to the landowner plaintiff by smoke necessarily discharged and by vibration and noise necessarily made by trains controlled by defendant were *damnum absque injuria,* except for damage sustained by reason of smoke discharged throughout the length of defendant's tunnel and emitted by a fanning system at the mouth of the tunnel, 114 feet distant from plaintiff's home. In reaching this conclusion the court said (34 S. Ct. 656):

[29] Each flight was operated pursuant to the *requirement* of one or more certificates of public convenience and necessity.

[30] See *Gardner, et al.* v. *County of Allegheny, et al., supra,* Note 21.

"The tunnel and the tracks leading from it across square 693 were located and constructed and are now maintained under the authority of acts of Congress of February 12, 1901, and February 28, 1903 (31 Stat, at L. 774, chap. 354; 32 Stat, at L. 909, chap. 856), in accordance with plans and specifications approved by those acts. No claim is made by plaintiff that the tunnel, the tracks in square 693, and the trains operated therein and thereon, were constructed, operated, or maintained in a negligent manner; and it is conceded that the tunnel and tracks were built upon property acquired by purchase or condemnation proceedings, and were constructed under authority of the acts of Congress and of permits issued by the Commissioners of the District of Columbia.

"Such being the essential facts to be deduced from the evidence, we have reached the conclusion, for reasons presently to be stated, that with respect to most of the elements of damage to which the plaintiff's property has been subjected, the courts below correctly held them to be *damnum absque injuria;* but that with respect to such damage as is attributable to the gases and smoke emitted from locomotive engines while in the tunnel, and forced out of it by means of the fanning system through a portal located so near to plaintiff's property that these gases and smoke materially contribute to injure the furniture and to render the house less habitable than otherwise it would be, there is a right of recovery.

"The acts of Congress referred to, followed by the construction of the tunnel and railroad tracks substantially in the mode prescribed, had the effect of legalizing the construction and operation of the railroad, so that its operation, while properly conducted and regulated, cannot be deemed to be a public nuisance. Yet it is sufficiently obvious that the acts done by defendant, if done without legislative sanction, would form the subject of an action by plaintiff to recover damages as for a private nuisance."

With respect to the damage caused by the emission of smoke at the tunnel's mouth, the Court said:

"But the doctrine [immunity from liability for incidental damages], being founded on necessity, is limited accordingly."[31]

The Court then discussed its decision in *Baltimore & P. R. Co.* v. *Fifth Baptist Church,*[32] 108 U.S. 317, 27 L. Ed. 739, 2 S. Ct. 719, and in the light of that case, said (34 S. Ct. 659):

"The present case, in the single particular already alluded to, that is to say, with respect to so much of the damage as is attributable to the gases and smoke emitted from locomotive engines while in the tunnel, and forced out of it by the fanning system therein installed, and issuing from the portal located near to plaintiff's property in such manner as to materially contribute to render his property less habitable than otherwise it would be, and to depreciate it in value; and this without, so far as appears, any real necessity existing for such damage — is, in our opinion, within the reason and authority of the decision just cited. This case differs

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[31] 34 S. Ct. 654 at 657.

[32] This case held that the defendant involved should be enjoined from continuing, unnecessarily, to maintain locomotive repair facilities in close proximity to plaintiff's church.

> from that of the Baptist Church, in that there the railroad company was free to select some other location for the repair shop and engine house; while here the evidence shows that the location of the tunnel and its south portal was established pursuant to law, and not voluntarily chosen by defendant. This circumstance, however, does not, as we think, afford sufficient ground for a distinction affecting the result. The case shows that Congress has authorized, and in effect commanded, defendant to construct its tunnel with a portal located in the midst of an inhabited portion of the city. The authority, no doubt, includes the use of steam locomotive engines in the tunnel, with the inevitable concomitants of foul gases and smoke emitted from the engines. No question is made but that it includes the installation and operation of a fanning system for ridding the tunnel of this source of discomfort to those operating the trains and traveling upon them. All this being granted, the special and peculiar damage to the plaintiff as a property owner in close proximity to the portal is the necessary consequence, unless at least it be feasible to install ventilating shafts or other devices for preventing the outpouring of gases and smoke from the entire length of the tunnel at a single point upon the surface, as at present. Construing the acts of Congress in the light of the 5th Amendment, they do not authorize the imposition of so direct and peculiar and substantial a burden upon plaintiff's property without compensation to him. If the damage is not preventible by the employment at reasonable expense of devices such as have been suggested, then plaintiff's property is 'necessary for the purposes contemplated,' and may be acquired by purchase or condemnation (32 Stat. at L. 916, chap. 856, § 9), and pending its acquisition defendant is responsible. If the damage is readily preventible, the statute furnishes no excuse, and defendant's responsibility follows on general principles."

Taking the *Baptist Church* case, together with the *Washington Terminal* case, it is submitted that the law as to railroads is as follows:

(1) If railroad operation is authorized by law, it may not be enjoined as a *public* nuisance (*Baptist Church*).

(2) The railroad is also immune from private actions based upon incidental inconveniences to adjoining landowners that are unavoidably attendant upon the operation of a railroad (*Washington Terminal* case).

(3) However, if the damage can be avoided by *voluntary* removal of the source of the damage to another location, the defendant is compelled to do so (*Baptist Church*).

(4) Even if the defendant is required by law to remain at the same location, if the damage is otherwise readily preventable, the defendant railroad must do so (*Washington Terminal*).

(5) In any event, the defendant railroad is not authorized to concentrate all or a substantial part of the incidental damages on any particular landowner (*Washington Terminal*).

Applying the railroad law to aviation in the context of the *Newark* case, it is apparent that:

(a) The defendant airlines are required by law to be where they are.

(b) The defendant airlines were not trespassing on plaintiffs' lands.

(c) The damages proved by the plaintiffs were of the same kind and quality (other than smoke) suffered by Richards in the *Washington Terminal* case.[33]

(d) There was no evidence that any of the defendants could readily prevent the damage.

(e) There was no evidence that the defendants concentrated the noise and vibration on any particular landowner. As a matter of fact, such a concentration is impossible. Indeed, applying the familiar rule of plane geometry to the problem—that in the case of a 30°, 60°, 90° triangle the hypotenuse is twice the length of the shortest side—we find that the train is a greater concentrator than the airplane.

A specific example will illustrate this point: an airplane flying at 500 feet will obviously be 500 feet away from the Smith house located on the railroad tracks directly below. However, applying the 30°, 60°, 90° rule, it will be only twice as far from the Jones house located 60° to its side—or 1,000 feet away. Since the intensity of sound varies inversely as the square of the distance from the source, the Smith house will be exposed only to four times the sound intensity that the Jones house will receive. Intermediate houses will vary correspondingly between these two extremes.

Comparing this situation with the noise from the train, we find that the Jones house and the Smith house are located laterally about 866 feet apart (the square root of 500^2 plus 1000^2 equals 866). If we place the Smith house at 50 feet from the track, the Jones house will be seventeen times as far away from the train—the sound source— and the sound intensity will be 17^2 less, or 1/289th as great. This calculation makes no allowance for the greater sound absorption by intervening houses of the surface created noise, which effect would further diminish the sound intensity at the periphery. There is no doubt that a greater diffusion of sound occurs in the case of an airplane flying at 500 feet or above, than in the case of the train.

Consequently, if unconcentrated noise from trains is not actionable by neighboring landowners along the railroad tracks, there are even less grounds for holding that the more evenly diffused noise from aircraft would be.

On the basis of the foregoing it is apparent that none of the landowners involved can make a good case that the incidental damage from noise is being concentrated on him and that he is suffering disproportionately with respect to other landowners in the neighborhood.

In essence then, no better case is made out for abating a nuisance than was shown in *Smithdeal* v. *American Air Lines, Inc.*, 80 F. Supp. 233, wherein it was found that "The occasional tremor is no more

[33] There were no scientific sound measurements reported in the *Newark* case. See *infra* p. 395 for comparison of aircraft noise with that of trains, etc.

than that occasioned by a train, heavily loaded and moving at a good pace some distance away."

Suppose, however, that the continual noise of aircraft does very materially affect the plaintiff's property, in a case where the flight path is over *adjoining* land, under circumstances where no relief is possible by changes in the flight patterns. In Part II of the article we concluded that the remedy of injunction was no longer open to the courts as a result of the enactment of the Civil Aeronautics Act, and particularly the Federal Aviation Act. This accords with holdings of the courts that where the offender is a public service corporation no injunction will issue for noise nuisance, but that a claim for monetary damages will lie, *Transcontinental Gas Pipe Line Corp.* v. *Gault, et al,* 198 F. 2d 196 (1952).

In looking at the question of monetary damages, it is necessary to bear in mind the operational facts, rather than to discuss it on the basis of pure theory. It is our hypothesis that the aircraft are being operated in full accord with the Civil Air Regulations. Among these are sections 40.72 (Interstate Air Carrier Certification and Operation Rules) and 41.29 (Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States). These sections both provide, in effect, that an air carrier may not permit its aircraft to take off unless it is possible, *with one engine inoperative,* to climb to 50 feet inside the airport take-off area and then clear all obstacles outside the airport by a *horizontal* distance of 300 feet. Normally an airplane does not experience engine failure on take-off, so that only the rare exception would come so close. Here then is a situation where—notwithstanding certain implications of the *Highland Park* case discussed immediately below—the passage of aircraft well over 300 feet above the land would undoubtedly not constitute a taking in the Constitutional sense. Why then should there be any legally recoverable damages at all? Certainly the tests should be the same, and if an airplane flying directly overhead is operating with impunity in the public domain, so must another airplane flying an equal or greater distance away to the side be regarded as immune from liability.

As has been indicated, the court in the *Newark* case found no evidence of trespass by any of the defendants over the land of any of the plaintiffs. It laid down the basic principle as follows:

> "The principles do not foreclose the right of the landowner to maintain an action for trespass to realty in a proper case but the action may not rest on evidence that the aircraft in flight passed across his land in the navigable air space above the immediate reaches thereof. There must be evidence not only that the aircraft passed over his lands from time to time but also that there was an unlawful invasion of the immediate reaches of his land; in other words, there must be evidence that the aircraft flights were at such altitudes as to interfere substantially with the landowner's possession and use of the airspace above the surface."

The Court of Claims has recently handed down a decision in the case of *Highland Park, Inc.* v. *The United States.*[34] This case has many disturbing aspects as it affects the problem under review here. It involved jet operations from Hunter Air Force Base, near Savannah, Georgia, and was a suit for just compensation for the taking of plaintiff's property by the United States.

The material facts—so far as our inquiry is concerned—are as follows: B47 aircraft flew over plaintiff's property at the rate of from 30 to 60 a day to and from the base. Their average altitude was 325-375 feet over the plaintiff's boundary on the airport side, 325-425 feet on the far side. Jet noise over the property on take-off averaged 76 decibels, the highest reading being 92. For landing aircraft, the figures were 70 decibels average, 92 being the highest reading. The GCA approach line sloped across plaintiff's property, intercepting the far boundary at 400 feet, the near boundary at 275. The 50 to 1 obstruction clearance line crossed the same boundaries at 150 and 100 feet, respectively. The court refers to a zoning ordinance of Savannah and Chatham County, but does not specify what limits the ordinance placed on height. The court subsequently, however, in discussing the obstruction clearance line (Opinion, p. 21), says "No obstructions are permitted to project above this imaginary line in the flight path."

So much for the facts. The case is remarkable in two aspects—(a) the government *admitted* taking an easement of flight, but defended on the ground that the taking pre-dated plaintiff's acquisition (Opinion, p. 4); and (b) the court at no time found that there was an invasion of the immediate reaches of the atmosphere above plaintiff's land, but on the contrary, in applying *Causby,*[35] stated the rule as being: "the air space over the land is a part of the public domain, which may be used with impunity *so long as the flights do not substantially interfere with the use and enjoyment of the surface* of the ground" (italics supplied). It is submitted that the government, by its admission, and the court, in the elimination of the "lower reaches" doctrine, have devised substantially new law of questionable soundness.

It is apparent that the court's failure to discuss the "lower reaches" doctrine was not inadvertent. Defendant's contention was that although the government had taken an easement, it had done so before the plaintiff acquired the property. The court agreed that if this was so, the plaintiff could not recover (Opinion, p. 4). However, it found that the earlier operation of B-29's and B-50's was not a taking, even though these aircraft passed over plaintiff's property at altitudes between 200 and 1,200 feet and over (Opinion, p. 2). While the court baldly makes the statement that the jet bombers flew over plaintiff's property at a lower altitude than the propeller driven planes (Opinion, p. 2), the

[34] 161 F. Supp. 597 (1958) C.Cls. No. 375-55, May 7, 1958. The case, as reported in *Federal Supplement* does not contain the Court's findings. Consequently, page references herein are to the slip opinion.

[35] 328 U.S. 256; 66 S. Ct. 1062 (1946).

only justification for this statement is that the "glide angle" for the jets was 100 feet at the western boundary, 150 feet at the eastern boundary of plaintiff's property (Opinion, footnote, p. 2). The court itself recognizes that the normal path of the B-47 is "considerably" higher (Finding 21 b., p. 21), and it is obvious that this "glide angle" is the airport obstruction clearance line. It has no more relevance to the flight paths actually flown by the jets than the ground has to the height at which trousers are usually worn. The average elevation of the jets over the property was found to be 325-375 feet on the western boundary and 425-475 feet at the eastern boundary of plaintiff's property (Finding 21d). Undoubtedly this average is lower than the average for the propeller driven aircraft, but there is simply no evidence referred to by the court that the jets flew lower than 200 feet.

If the propeller driven aircraft did not "take" the property subsequently acquired by plaintiff by flying at 200 feet, but the jets did "take" it by flying at 325-375 feet, it is obvious that the court regarded the taking solely as a function of the noise created, rather than an invasion of the lower reaches of the atmosphere. Indeed, the court specifically finds that there was no constant correlation between the height of a plane and the noise it produced at ground level (Finding 20, p. 20).

Thus the basic theory of the case appears to sound in nuisance[36] rather than in trespass, but the court is by no means clear on this point. It describes the action of the government as one of taking an easement, and as part of its action in awarding plaintiff damages for a taking, it vests defendant with a perpetual easement of flight over the property at an elevation of 100 feet or more above the ground with airplanes of any character. This confusion of theories leaves the case in a most unsatisfactory posture. Possibly it could be supported on the basis of the *Baptist Church* case, *supra,* on the theory that the government is at liberty to build an airport and operate its jets anywhere it may choose, and was therefore not required to create the base where it did—with the consequence that it would be liable for even a partial taking by way of nuisance. If this had been the theory of the case, it would make it readily distinguishable from the *Newark* case where the defendants were forced to operate where they did and there would have been no need to rely on *Causby* as justification.

However, the court did rely on *Causby,* and in so doing twists it out of shape. "The air space, apart from the immediate reaches above the land, is part of the public domain," *U. S.* v. *Causby,* 328 U.S. 256, 266. With a finding that B-29's and B-50's did not "take" at 200 feet, the law of the case is that everything at that altitude and above is part of the public domain. There is no finding that the jets operated below that altitude. Consequently, *Causby* simply cannot apply.

If *Causby* is not applicable and the *Baptist Church* case is not relied on, is there any other basis on which the *Highland Park* case can be

[36] Indeed, in finding 19b (Opinion, p. 18), the Court specifically finds that the record "in the case offers no reason to anticipate an abatement of the nuisance."

sustained? Both the *Baptist Church* case and the *Washington Terminal* case contained dicta to the effect that a nuisance to an extent amounting to an *entire* deprivation of the use and enjoyment of property was compensable as a taking. Was this the case in *Highland Park?*

So far as appears from the opinion, no evidence was adduced by defendant to show the comparative noise levels of surface sounds. The Civil Aeronautics Administration has performed an interesting and useful study of this nature.[37] In this booklet it appears that the intensity of the ordinary noise made by steam engines and trains at 400 feet is 83 decibels, when whistling at the same distance, 93 decibels. At 400 feet on a level highway, semi-trailer trucks produce a maximum of 78 decibels, but when they grind uphill in low gear, they produce a husky 83 decibels.

Using the same charts and graphs in this booklet, but applying them to the 90-foot distance between plaintiff's house and the middle of the railroad tracks in the *Washington Terminal* case, we find a value of approximately 92 decibels for train noise without whistles, and over 100 decibels when whistling. (There was no evidence of such indecorous conduct, however.) Yet the court held the noise—along with other incidental damage—to be *damnum absque injuria.*

Apart from scientific measurements, the damage and annoyance in the *Washington Terminal* case closely resembles the type of damage found in the *Highland Park* case, and the *Newark* case.

> "The house has also been damaged by vibrations caused by the movement of trains on the track or in the tunnel, resulting in cracking the walls and wall paper, breaking glass in the windows, and disturbing the peace and slumber of the occupants." *Washington Terminal* case, 34 S. Ct. 664, 665).
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> "When they passed over the property, all conversation had to cease, radio and television reception was disrupted, the windows in the house shook, dishes rattled on the shelves, sleep was disrupted, and the noise was so great as to be painful to the ears of some of the residents."[38] (*Highland Park* v. *U.S.*, Opinion, p. 2.)
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> "During the period that I am home I noticed that there are anywhere from thirty to fifty planes until one o'clock in the morning, that is, the period from six o'clock at night to one o'clock in the morning. Some near, some far, some very, very close. These planes come over, both coming from the Airport and going to the Airport. They come over with a terrible roar; they come over, they shake the house; they have caused cracks in the ceiling; they have caused the dishes to jingle in the cupboard, they have caused us to wake up at night. They disturb my sleep and my family's sleep." (*Newark* case, 159 F. Supp. 750, 762.)

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[37] *Technical Development Report No. 68*, July 1947, U.S. Department of Commerce, Civil Aeronautics Administration, Washington 25, D. C.

[38] The recital by the court that the noise was painful to the ears of some residents is inconsistent with its specific findings: i.e., "The accepted threshold of feeling, or that point at which noise becomes physically painful to the ears, is about 120 decibels, again at certain frequencies" (Finding 20, p. 19). "The average sound intensity of the B-47 is 76 decibels, the highest reading being 92 decibels." (Finding 20, p. 20).

We can now establish a sort of box score on damages as between the *Washington Terminal,* the *Highland Park,* and the *Newark* cases.

MATTER AFFECTED	WASHINGTON T.	HIGHLAND P.	NEWARK
Conversation		Difficult	
Ceiling		Damage not established	Cracked
Walls	Cracking	Damage not established	
Dishes		Rattled	Jingled
Windows	Broke	Shook	
House	Damaged by vibrations		Shook
Sleep	Disturbed	Disrupted	Disturbed
Peace	Disturbed	Radio and television disrupted	Wake us at night

One of the peculiar vices of the *Highland Park* decision is the assumption that because of the jet noise the land in question had only a residual value. This was based on the theory that only a speculator, who would gamble that jet operations at Hunter might be abandoned, would pay anything for it (Opinion, p. 6). So far as other uses are concerned the court refers to certain restrictive covenants with homeowners who had already bought land from the plaintiff company and makes the judicial guess that the existence of the covenants "no doubt makes it impossible for it to sell the remaining lots for other than residential purposes."

The opinion as published in Federal Supplement makes no mention of the fate of the individual owners who had bought homesites from the plaintiff. However, in the slip opinion of the Court, the findings are published, and in finding No. 19 the Court states that "Homeowners were unable, despite efforts, to sell their homes and move elsewhere without sacrificing their investments." Just what sacrifice would have to be made, the opinion doesn't say, and the only other reference to a sale by a homeowner is in a footnote to finding No. 10 that ". . . an individual owner of a home in Highland Park resold it in December 1956 under circumstances not disclosed by the record."

The disturbances from noise complained of by the residents were substantially similar to those complained of in the *Newark* case, as has been shown. Also by way of comparison see the dissenting opinion of Mr. Justice Black in *U. S.* v. *Causby,* where he says: "Nor would anyone take seriously a claim that noisy automobiles passing on a highway are taking wrongful possession of the homes located thereon, or that a city

elevated train which greatly interferes with the sleep of those who live next to it wrongfully takes their property."[39]

Undoubtedly, the jet noise in the neighborhood diminished the value of the land as homesites, but every diminution of land value is not necessarily compensable as a taking. Zoning ordinances have been sustained which had the effect of curtailing land values by more than five times. *American Wood Products Co.* v. *City of Minneapolis,* 35 F. 2d 657 (C.C.A. 8, 1929). This was held to be a valid exercise of state police power.

There is no reason why the same tests and conclusions should not be reached where the federal government, in the exercise of its commerce power enacts public measures to safeguard the flying public.

Under *Causby* there was an actual penetration by the aircraft of the lower reaches of the atmosphere. The analogies upon which the court relied were overhanging eaves, putting up an elevated railroad over the property, ability to erect buildings, grow trees and build fences, and the opinion refers to "flight of airplanes, which skim the surface but do not touch it." These are all activities within 100 or so feet of the ground (other than erection of radio masts and skyscrapers). The court refers with apparent approval to a 300 foot minimum altitude requirement of the Civil Air Regulations as creating a floor of the navigable air space over open country.

Thus it is submitted that jet noise alone does not constitute a taking —there must be an actual invasion by the aircraft of the *immediate* reaches above the land. Once this is shown, undoubtedly the noise produced must be taken into consideration on the question of damages.

The enactment of the Federal Aviation Act presents a splendid opportunity to the new Administrator to deal with the problem directly. He is required to administer the new Act in such a way as to protect property on the ground. Naturally he will exercise this authority to eliminate, or curtail as much as possible, objectionable noise, consistent with safety of flight and efficient use of air space. The police power which he possesses in the regulation of air commerce will give him considerable latitude in the extent that he can authorize approach patterns which impinge upon the value of property below. However, *Causby* says that there is a lower limit below which frequent flights would constitute a taking.

Thus there is need for him to make an administrative determination of where his police powers end and where a taking of property begins. In making this determination he will be helped by the fact that a great many of the country's airports have been built or improved under the Federal Act and that consequently free approaches are guaranteed down to the obstruction clearance line. In those cases where this obligation has been met by local exercise of eminent domain, in which the air space has been condemned, he has no problem since that is in the

[39] 328 U.S. 256, 270; 66 S. Ct. 1062, 1070.

public domain by local action and is now defined as navigable air space under the Federal Aviation Act.

In those cases where the responsibility for clear approaches has been met by local zoning ordinances, the problem is more troublesome. Here the landowner is limited by local action in the height of structures he may erect, but in some instances the normal take-off and landing paths, while *above the obstruction clearance line* will penetrate the lower reaches. Here, it is submitted, the Administrator must exercise his regulatory power over aircraft flights so that a non-trespassing flight path will be produced most of the time. Conceivably it could require re-orientation of the ILS glide path of localizer and a reasonable restriction on fuel or payload to insure steeper take-offs. But the extent to which this type of juggling can go on is very limited, and if the operational restrictions imposed seriously affect the ability of air carriers to utilize the newest equipment to the full limit of their airworthiness certificates, the remedy should be consultation with the local airport authority.

Conclusions

In conclusion, it is submitted that with the enactment of the Federal Aviation Act of 1958, the legal situation regarding aircraft noise is as follows:

1. The navigable air space now extends by specific Congressional act down to the obstruction clearance line for all airport approaches (Federal Aviation Act, Section 101 (24)).

2. Under the Federal Airport Act there is an obligation on the part of local airport authorities which have benefited from that Act to keep such approaches free of physical obstructions.

3. In some instances the obstruction clearance line will intercept the "lower reaches" of the atmosphere above the property of an adjoining landowner.

4. Such interception does not of itself constitute a taking of property (it is only an intangible line). Only where aircraft penetrate the lower reaches *frequently* will there be a taking (*U. S.* v. *Causby*).

5. The Administrator now has the power and the duty to regulate the flight of aircraft for the protection of property on the ground (Federal Aviation Act, Section 307 (c)).

6. In order to insure that the new Act will not operate unconstitutionally in certain cases, the power to protect ground property must include the power to prevent its taking by low and frequent flights even when such flights are within the navigable air space as now defined.

7. It is therefore an absolute duty of the Administrator, in cases where the "lower reaches" are embraced in the navigable air space by reason of the interception of the obstruction clearance line, to prohibit aircraft flight (except in emergencies) within such lower reaches.

8. In order to insure uniform application of the foregoing regulations throughout the country the Administrator must determine by metes and bounds the uppermost extent of the "lower reaches." He should do this after a full hearing, in which all interests have an opportunity to present evidence, and should give full consideration to the relative noise produced by all types of present day activity.

9. In cases where application of the foregoing regulations would seriously curtail airline operations which otherwise could be conducted at any given airport, query as to whether the Administrator has a cause of action against the local airport authority, if the airport has been built or improved under the Federal Airport Act, to require condemnation of such air space by such airport authority.

10. In addition to the foregoing, the Administrator has the power to require still higher flight paths above the immediate reaches to prevent a diminution of property values through aircraft noise, and to prescribe flight patterns for the same reason. In so doing, however, he should recognize that he is now exercising legitimate police powers, and the interests of the landowner, though they may be adversely affected, must be balanced against consideration of safety and efficient use of the air space. The power here is analogous to the zoning power of municipalities.

11. If it proves impossible for the Administrator to prevent substantial diminution of property values by reason of noise through his regulatory powers, because of the paramount needs of safety and efficient use of the air space, he has full power to develop silencing equipment and to require its use.

12. By virtue of the foregoing, the federal government has effectively and completely occupied the field of regulation of flight and the protection of landowners from flight activities. Factually, it is inconceivable that any air carrier would or could operate aircraft with any degree of frequency below the obstruction clearance line at any airport. Consequently, all normal flight operations will be within the air space over which Congress has vested exclusive control in the Administrator. There still will remain the question of whether the Administrator's "lower-reaches protective regulation" does in fact protect the landowner against an unconstitutional taking of his property under *Causby*, but if the regulation has been thoroughly considered, on a nationwide basis, it is quite probable that the courts will defer to the Administrator's expert judgment.

13. The effect of all the foregoing is as follows:

(a) It would require reversal of the holding in the *Pittsburgh Airport* case in several respects:

(i) The airline operations would be now within the air space over which Congress has taken complete control, and primary jurisdiction would be in the Administrator.

(ii) If the flights were within the lower reaches and in violation of the "lower reaches regulation," the power to enforce is vested in the Administrator and even parallel enforcement by the State would encroach upon his preserve.[40]

(iii) If the flights were within the "lower reaches" but not in violation of any protective or other regulation of the Administrator, the air carriers would not be liable since they would be operating in the navigable air space declared by Congress to be free for transit. Any "taking" involved would be by the United States—more specifically, the Administrator—for failure to take necessary steps to keep the air space within constitutional bounds, and it would thus become a necessary party defendant.

(b) In regard to nuisance suits, not involving penetration of the "lower reaches" over plaintiff's land, the following results would appear to obtain in respect of air carrier aircraft:

(i) where the plaintiff's land is rendered totally valueless for any purpose. This hypothesis is almost impossible to visualize since, if the flight is over adjoining land, airport layout and operational performance requirements would place the aircraft well over 300 feet away. If over plaintiff's land, the "protective regulation" should have taken this factor into account. A very strong presumption will exist that no such taking has occurred. If a complete taking should be established, injunction will not lie and the matter will be in the primary jurisdiction of the Administrator. However an action for damages might be successful.

(ii) in all other cases where the plaintiff's property has been adversely affected, neither suit for injunction nor action for damages will lie. This comes about not so much through the doctrine of primary jurisdiction, as through the thoroughgoing occupation of the field by the federal government. Unlike the case of a taking in the constitutional sense, where some form of remedy must be preserved, the federal government here may abolish all remedies entirely in the exercise of its police power, and the loss becomes *damnum absque injuria*—either through application of the doctrine of the *Washington Terminal* case, or *via* analogy to State zoning power. Whichever of these roads is followed, the result must be the same—the enactment of the Federal Aviation Act has not only fully

[40] So far as injunction suits are concerned. Since, like its predecessor the Civil Aeronautics Act, the Federal Aviation Act of 1958 makes no provision for reparations, actions for monetary damages for past trespasses would lie outside the "primary jurisdiction rule." See *S.S.W., Inc.* v. *Air Transport Association, supra,* Note 22; *Slick Airways* v. *American Airlines,* 107 F. Supp. 199.

occupied the field, but has prescribed a different mode of attack on the noise problem from an adjudicatory one to a regulatory, developmental, and administrative one in the interest of society as a whole. Here, the fact that reparations are not within the Administrator's or Board's powers under the Act is immaterial, since the issue is not whether Congress has transferred jurisdiction to redress a private wrong from the courts to the agency, but whether Congress, acting within its police power, has abolished the right of private redress entirely.

(c) Conditions regulating approach and take-off tracks or dealing with allowable loads, imposed by local airport authorities in the interest of adjoining landowners, are void as an unconstitutional attempt to regulate flight activity—a field preempted by the federal government. Compare *Village of Cedarhurst* v. *Allegheny Airlines, et al.* As such they are obviously unreasonable terms and conditions, and the Administrator both as regulator and contractor should take prompt action to enjoin their enforcement.

Washington, D. C.

November 1958

A MAP ANALYSIS OF UNITED STATES AIRLINE COMPETITION[1]

By Edward J. Taaffe
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Part II — Competition and Growth

IN the first part of this study[2] the development of airline competition among the 99 leading city pairs[3] was portrayed in a series of maps. In part the purpose of the first article was to provide a clear picture of individual route competition in the broader competitive setting of the leading city pairs; in part, it was to determine meaningful competitive categories for the evaluation of the relation between competition and growth. From the map examination it was evident that a consideration of prewar to postwar growth involved such sweeping competitive change as to render it of questionable significance as a study period. Of the other two periods represented on the competitive maps, 1949-1954 was a period of competitive stability, 1954-1956 was a period of competitive change associated with the initial impact of the recent round of CAB decisions. If one considered 10 per cent competition as effective competition, the 100 city pairs could be divided into one-, two- and three-carrier pairs.[4] Those pairs which had no single-carrier service were grouped with the one-carrier pairs; those which had more than three effective competitors were grouped with the three-carrier pairs.

In this second part of the study, the growth pattern of the 99 city pairs is mapped both for the period of competitive stability and the

[1] Both Part I and Part II of this study represent some preliminary findings of an empirical investigation of the traffic characteristics of the leading city pairs. The investigation is being carried on in connection with a Transportation Center study of CAB regulatory policy. Any conclusions are, of course, quite tentative in nature. It is hoped, however, that this cartographic and tabular presentation will act as a stimulus to communication from airline research and traffic personnel regarding more detailed and realistic interpretation of the growth and competitive characteristics of individual routes.

[2] Edward J. Taaffe, "A Map Analysis of United States Airline Competition—Part I: The Development of Competition," Journal of Air Law and Commerce, XXV, (Spring, 1958) pp. 121-147.

[3] As is discussed in Taaffe, *op. cit.*, p. 122, only 99 of the 100 leading city pairs are mapped. Tampa-Chicago and St. Petersburg-Chicago, both of which were included among the 100 leading pairs in March, 1956, are considered as a single pair.

[4] Although the ten per cent definition has been used by Gill and Bates and others, its arbitrary nature should be noted at the outset. As a partial compensation for this, some of the findings in this study are also checked against a five per cent definition. Even this has serious weaknesses, however. A carrier may be quite inactive over a route and still, by its very existence, constitute a potential threat which may have an effect on the other carriers which is indistinguishable from the effects of an active competitor. The definition of competition for purposes of evaluating its growth effects becomes even more difficult when one considers that the anticipation of possible competition may also cause a carrier with a monopoly route to behave like a competitor. This is particularly true of a period of route awards such as 1955-1956.

period of competitive change. Each of these patterns will be examined, first, to determine principal growth factors, then for evidences of significant differences in growth between one-, two-, and three-carrier pairs after adjustments have been made to modify these growth factors. Differences in percentages of coach travel will also be examined for evidences of relation to number of competitors. Finally, the city pairs which experienced an increase in the number of effective competitors will be mapped separately and their growth rates compared with those of the city pairs which did not experience an increase in effective competition.

In some respects, therefore, this study is similar to the previous studies cited.[5] The findings in these were essentially negative in regard to any relationship between growth and competition. An important difference in this study, however, is the fact that it covers the period after 1949 when the initiation of coach services added a new dimension to airline competition. In addition, explicit attempts will be made to eliminate Florida traffic, to modify the length-of-haul factor, and to note other possible complicating factors by observing pertinent growth rates in the map context of the 99 city pairs.

Traffic Growth from 1949 to 1954

Figure 1 presents the growth in air traffic over each of the 99 city pairs from 1949 to 1954. The base map is the same as that used in the article dealing with the development of competition.[6] Each circle on the New York inset, for instance, represents the 1956 passenger-miles between New York and that city graded into three magnitude categories. Of the 99 leading city pairs in March, 1956, all but 12 are represented by the circles on the New York, Chicago, Los Angeles and Miami maps. These twelve are represented by squares. On the Chicago inset, the squares represent Washington traffic, on the Los Angeles inset they represent San Francisco traffic and on the Miami inset they represent Tampa traffic.

The red and the black-and-white patterns in the circles represent percentage rates of growth. The histogram-legend in the lower left hand corner presents a frequency distribution of the 99 growth rates. The

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[5] Frederick W. Gill and Gilbert L. Bates, *Airline Competition*, (Cambridge: Harvard University Press, 1949); Herbert H. Whitehead, "Effects of Competition and Changes in Route Structure on Growth of Domestic Air Travel," JOURNAL OF AIR LAW AND COMMERCE, XVIII (Winter, 1951), pp. 78-90; Harold D. Koontz, "Domestic Airline Self-Sufficiency: A Problem of Route Structure," *American Economic Review*, XLII (March, 1952), pp. 103-125; Gilbert L. Bates, "Current Changes in Trunkline Competition," JOURNAL OF AIR LAW AND COMMERCE, XXII, (Autumn, 1955) pp. 379-405.

[6] For a thorough discussion of this base map, see Taaffe, *op. cit.*, pages 123-125. All data represent two-way traffic and were again drawn from Civil Aeronautics Board, *Airline Traffic Survey*, Washington, D. C.: U. S. Government Printing Office, and Air Transport Association, *Origination-Destination Airline Revenue Passenger Survey*, Airline Finance and Accounting Conference, Washington, D. C. March and September totals were used in all cases. In the case of 1949 to 1954 growth rates, the 1954 figures were corrected by a factor of 2.21 to allow for differences in survey periods. The author wishes to express his thanks to John T. Hoare, graduate student in geography, for cartographic assistance.

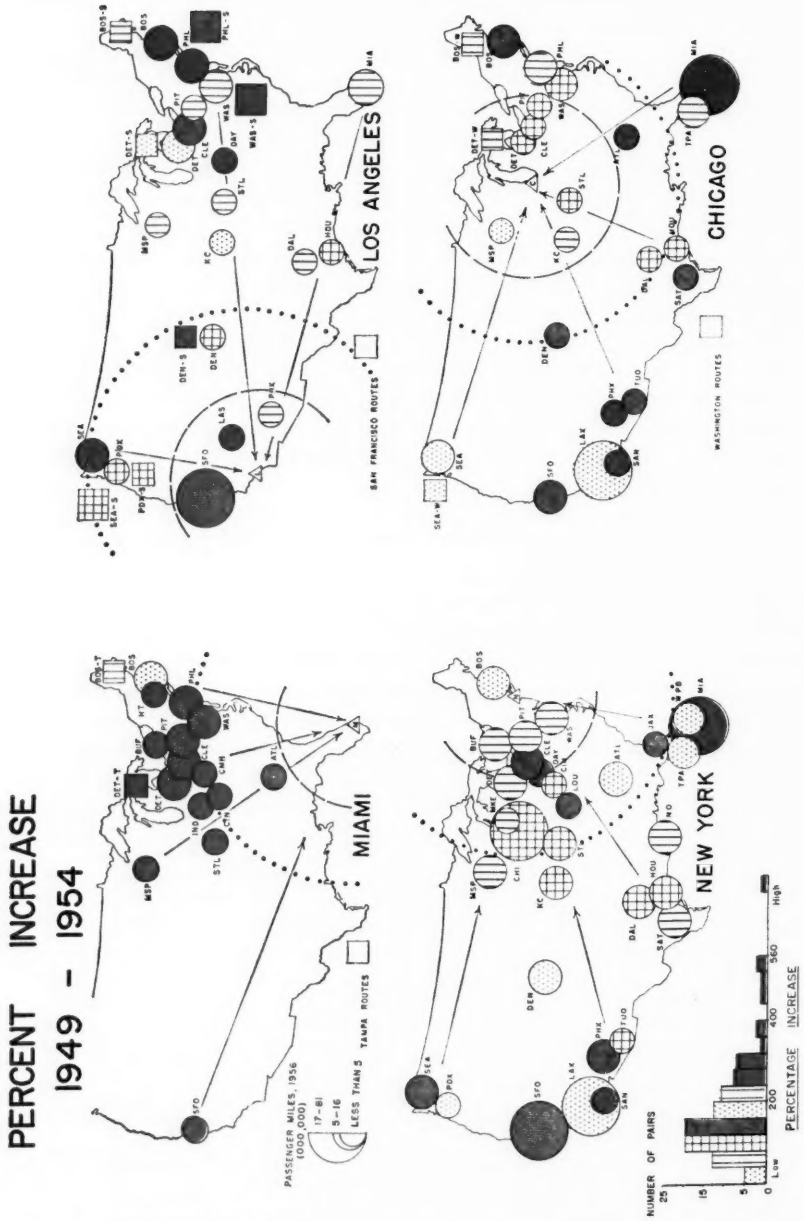

Figure 1 — Percentage Increase in Air Traffic from March and September, 1949 to March and September, 1954

shaded category is approximately centered on the mean;[7] the red categories represent growth rates greater than average; the black-and-white categories represent below-average growth rates. Each bar in the legend represents roughly one-half a standard deviation. Note that there are a number of high-increase bars on the red open-end category, which represents growth rates above 241 per cent. As growth rates increase from the average, the red pattern becomes more intense, from dots, to lines, to solid color; as growth rates decrease, the black-and-white patterns become less intense, from cross-hatches, to line, to dots. Thus, on the Chicago inset, the shading in the Boston circle indicates that the Boston-Chicago growth rate fell in the average category from 121 to 160.5 per cent; the line pattern in the Boston square indicated that Boston-Washington traffic fell in the first category below that of the average (roughly between ¼ and ¾ of standard deviation below the mean).

The most conspicuous features of Figure 1 are the high rates of increase noted at the Florida resorts and at the long-haul cities. Air passenger traffic to the Florida resorts increased at a phenomenal rate from 1949 to 1954. Miami, Tampa, and other Florida city pairs had an average rate of increase of 288 per cent, more than twice the 136 per cent increase for all domestic traffic. There were eight growth rates greater than 325 per cent among the 99 city pairs. One of these was the Los Angeles-Las Vegas route; all of the rest were on the Miami-Tampa map. Growth in Florida traffic seemed to be distributed among northern cities with little concern for the presence of single-carrier services or the effectiveness of coach services offered.[8] High rates of increase will be noted at cities with no coach service (Indianapolis, Columbus, and Hartford), with no single-carrier service (Minneapolis), and with neither single-carrier nor effective coach service (Buffalo). It is also interesting to note that the very highest growth rates (those above 300 per cent) in Florida traffic were not recorded at the high density, relatively long-established New York and Chicago routes (see New York and Chicago insets) but at such other American Manufacturing Belt cities as Detroit, Cleveland, Pittsburgh, and Philadelphia. At some of these cities markedly better services had been initiated during the period.[9] The higher and more consistent Florida increases sets them clearly apart from the Arizona and California increases, which may also be associated with resort travel. For most purposes of this study, there-

[7] More accurately, the shaded pattern is centered on the mean for the 75 non-Florida pairs. The red-dotted category is centered on the mean for the entire 99 city pairs. Table 1 in the appendix lists the values for each of these categories as well as growth rates, coach percentages and number of ten per cent competitors for each of the 99 pairs.

[8] Coach percentages for each city pair are included in Table 1 in the appendix. These figures were added to work maps to facilitate analysis, but, as will be noted from the tables, their relation to growth was too weak to justify inclusion on final maps.

[9] It should also be noted, however, that this is, in part, related to the problem of comparing percentage changes of quantities which have a fairly wide range of magnitude.

fore, the 24 pairs involving Florida traffic will be excluded from consideration. In many instances, the Los Angeles-Las Vegas traffic will also be excluded.

The relatively greater growth of long-haul than of short-haul cities is evident in the general tendency for the shaded (average) and red (above-average) patterns to predominate on each inset map as distance increases from the city concerned. This tendency is emphasized by the curved lines on the map which represent the 500 and the 1,000-mile distance zones. The dotted lines, representing the 1,000-mile zone, serve as a rough boundary between the high and the low growth rates (see the Miami and Los Angeles maps). Long-haul California traffic experienced particular growth. The 33 city pairs which include California traffic had an average rate of growth of 189 per cent, compared to the total growth of 136 per cent. The over-all correlation between length of haul and rate of growth was measured by simple linear regression. The result was a correlation coefficient of .40 (excluding the Florida resort routes) which tested as significant but only accounted statistically for 16 per cent of the variation.[10]

Table 1 presents another view of this relationship.

Length of Haul	*Average Rate of Increase*
0-500	104
500-1000	124
1000-1500	171
1500-2000	201
Over 2000	191

It will be noted that there is a fairly regular progression of average rates of increase with broad distance zones. The slight drop-off from the 1500-2000 mile zone to the over-2000 mile zone is probably associated with slight differentials in growth between some of the long-haul, high-increase California routes. Many routes departed markedly from this progression as is clear from the map. New York routes to Cleveland and Dayton, as well as Chicago routes to Boston and Philadelphia are examples of average or high-increase, short-haul routes. New York routes to New Orleans, the Texas cities and Tucson are low increase, long-haul examples, as are Los Angeles routes to Kansas City and Texas.

A third possible growth factor is represented by the percentage of coach passengers on each route, as listed in Table 1 in the appendix. The percentage of coach passengers on a given route should be related to both the amount and the effectiveness of coach services offered. Routes which have a large number of coach flights scheduled at convenient hours would presumably have a considerably higher proportion of coach passengers than comparable routes with coach flights scheduled

[10] In the absence of precedents it is difficult to say whether such a coefficient is really relatively low as it would appear. Cross-section analyses of growth rates on individual routes might be expected to be quite erratic and such a coefficient might actually be high. Such haphazard factors as bad weather, conventions, etc. probably have considerable impact on the two-week survey period. The use of correlation measures in this instance is less as an index of closeness of relationship than as an expedient to facilitate comparison.

at inconvenient hours. Thus, we might expect a positive relationship between growth rates and percentage of coach passengers. Inspection of Table 1 in the appendix indicates that this relationship is quite weak. Regression analysis gives a correlation coefficient of .23 which is significant at the five per cent level but not at the one per cent level.[11] Among the many exceptions to a relationship between growth and coach percentages are the high rates on Dayton and on Cleveland routes as well as on the Los Angeles-Denver route. Quite a few routes show low growth rates despite high coach fares, such as those to Kansas City and some of those to the Arizona resorts.

Thus, it appears that there are two factors significantly related to differential growth in air travel among the 99 city pairs—resort travel and length of haul. Neither of these are directly related to competition. It is probable, therefore, that the great air traffic growth from 1949 to 1954 is related to a basic change in American travel habits so sweeping as to render difficult the relation of growth differentials to explicit CAB policy regarding competition. For purposes of analysis, it is fortunate that a third possible factor, coach service, is less clearly significant since it should bear some relation to competition. Elimination of coach effects would therefore carry with it the risk of eliminating some competitive effects.

The first step in an attempt to isolate possible effects of competition is to eliminate the 24 Florida city pairs and separate the remaining city pairs onto three groups of maps, showing one-, two-, and three-carrier pairs (Figure 2). The growth categories are the same as in Figure 1. The resulting visual impression is that there is no strikingly consistent tendency for growth rates to increase from left to right. What tendency there is seems to be associated with the concentration of high-increase California traffic on the three-carrier map. A progression in growth rates does show up, however. The one-carrier pairs had an average growth rate of 129 per cent, the two-carrier pairs had an average of 133 per cent, and the three-carrier pairs had a high average of 207 per cent. This last, however, included an extremely high figure for Los Angeles-Las Vegas traffic which possibly should have been excluded in view of its similarity to the Florida resort traffic. The average without Los Angeles-Las Vegas for the three carrier pairs was 175 per cent. The difference between the categories was tested by use of analysis of variance. This consists of a comparison of the variation *between* groups with the variation *within* groups. Is the difference in average growth rates between the one-, two- and three-carrier pairs, for instance, a difference which might occur merely by chance in view of the amount of variation in growth rates which still exists within each of these categories? The between-group and within-group estimates of variation are then expressed as a ratio and referred to probability tables. The

[11] That is, a coefficient of such magnitude could be obtained purely by chance one time in one hundred even though no relationship actually existed.

greater the between-group variance estimate relative to the within-group estimate the higher the ratio and the less likely it is that the difference in means between the groups is due merely to chance. In this case the resulting "F" ratio (3.74) tested as significant at the five

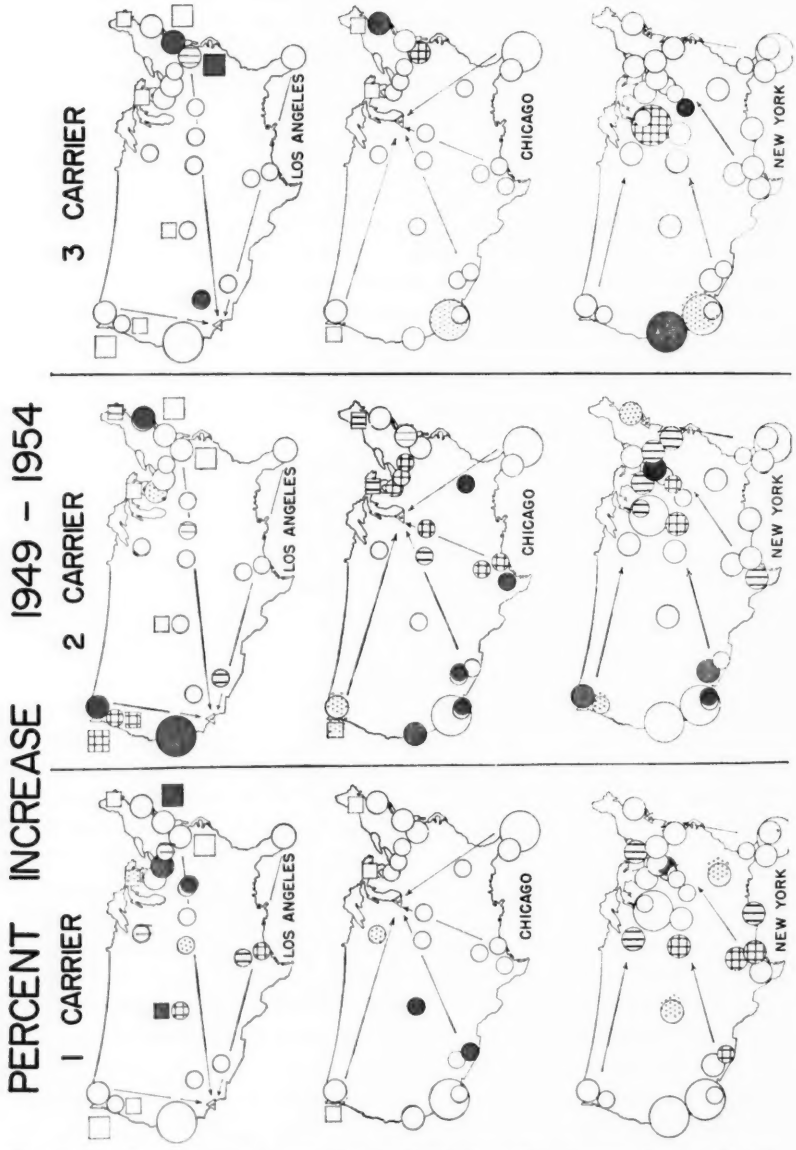

Figure 2 — Percentage Increase for 1949-1954 Traffic Grouped According to Number of Competitors

per cent level (3.13) but not at the one per cent level (4.92).[12] When the Los Angeles-Las Vegas route was excluded, however, the F ratio was appreciably below both the five and the one per cent levels.[13] Similar results were obtained from tests utilizing a five per cent share of the market as the criterion for effective competition so as to reduce possible distortions associated with the arbitrary ten per cent definition. Thus, if one were to exclude Los-Angeles-Las Vegas on the ground that it is clearly a resort pair, the separation of non-resort pairs into three groups according to the number of effective competitors did not separate high and low growth rates in any statistically significant fashion, although the progression in average growth rates should certainly be noted.

Since coach services also may have some relation to traffic growth, it is of some interest to investigate the relationship between coach services and competition. One would expect the percentage of coach service to increase with the number of competitors. However, even the averages fail to bear this out. The one-carrier pairs had an average rate of 29 per cent coach passengers, a figure actually higher than the 27 per cent recorded for the two-carrier pairs. Three-carrier pairs had an average of 37 per cent. The use of analysis of variance on these data indicated that differences were not significant either between all three groups or between the two- and three-carrier groups. This may indicate, at least tentatively, that decisions to introduce effective coach fares are more affected by the nature of the traffic, length of haul, particular airlines concerned, etc., than by the number of competitors.[14]

The next step in the evaluation of growth rates is to attempt to modify the complicating factor of length of haul. The variation within the groups may be due to differences in length of haul which conceivably might obscure an actually close relationship between growth and number of competitors. The scatter diagram in Figure 3 represents an attempt to modify this factor. The regression line represents the weak average relationship between traffic growth and length of haul. Dots located above the line represent routes on which growth has been

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[12] As applied to random sampling, this would mean that a figure as high as 3.13 could be obtained purely by chance in five out of one hundred trials even though there were no significant differences between the groups; a figure as high as 4.92 would be obtained only once in one hundred trials. One might regard this example as a case wherein the hypothesis under examination is that the one-, two-, and three-carrier growth rates could represent samples from the same statistical universe. Low ratios mean that this hypothesis might be accepted and that the groupings according to number of competitors does not result in any greater difference in means than would be expected from normal sampling error. Certain difficulties involved in applying this measure to non-random samples indicate that the terms "significant" and "insignificant" are relative and should be accepted with considerable caution. Here too, however, the device is considered as a useful aid to precise comparison in that it provides a numerical check on the evaluation of between-group variation by weighing it against remaining within-group variation.

[13] When the Los Angeles-Las Vegas route is included, the variance of the three groups is non-homogeneous so the size of the ratio is not traceable entirely to differences in the means. When this route is excluded, however, the requirement of homogeneity of variance is met.

[14] TWA's emphasis on coach services, for instance, shows up in the high coach percentages on many important TWA pairs.

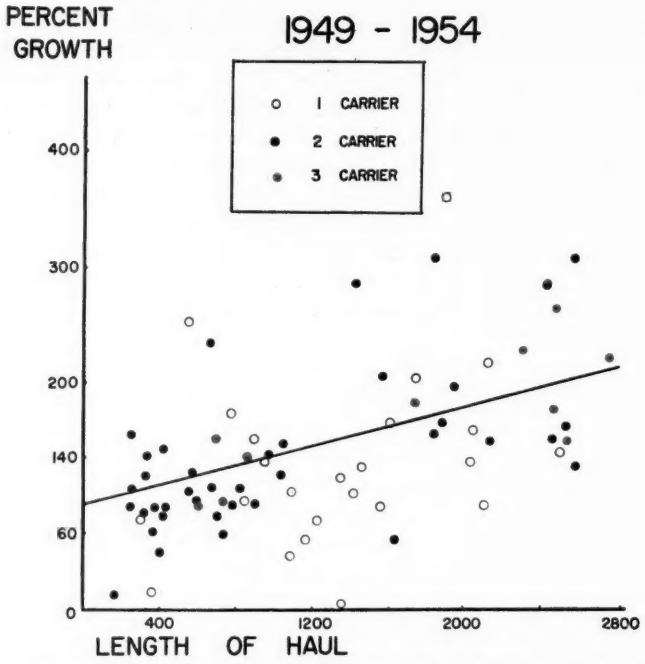

Figure 3 — Regression of Growth on Length of Haul, 1949-1954

greater than expected from the average relationship between length of haul and growth; dots below the line indicate growth which has been less than expected from this relationship. The residual variations as represented by the position of the dots have been categorized into three groups according to competitors. The red dots represent three-carrier routes; the blank dots represent one-carrier routes. Visual inspection of the scatter suggests a slight improvement in the relation of growth to competition, although there is still by no means a consistent grouping of three-carrier dots above the line or one-carrier dots below the line.

Figure 4 represents the spatial distribution of these residual variations. The legend categories are similar to those on the growth map. The shaded category represents those dots (city pairs) which are clustered close to the regression line; the red patterns represent dots well above the line (city pairs with a greater growth rate than would be expected from that length of haul); the light, black-and-white patterns represent dots well below the line.[15] Note how the distance effect has

[15] Each category is approximately one-half a standard error of estimate in width. The categories are as follows:

red:	+101 or more
red lines:	+ 61 to +100
red dots:	+ 21 to + 60
shading:	+ 20 to — 20
cross-hatch:	— 21 to — 60
lines:	— 61 to —100
dots:	—101 or less

been modified, particularly on the New York and Chicago insets. Closer examination of some of the highs on this map indicates the multiple product nature of air transportation as it is reflected in the many specific institutional factors associated with growth. The Las Vegas-Los Angeles

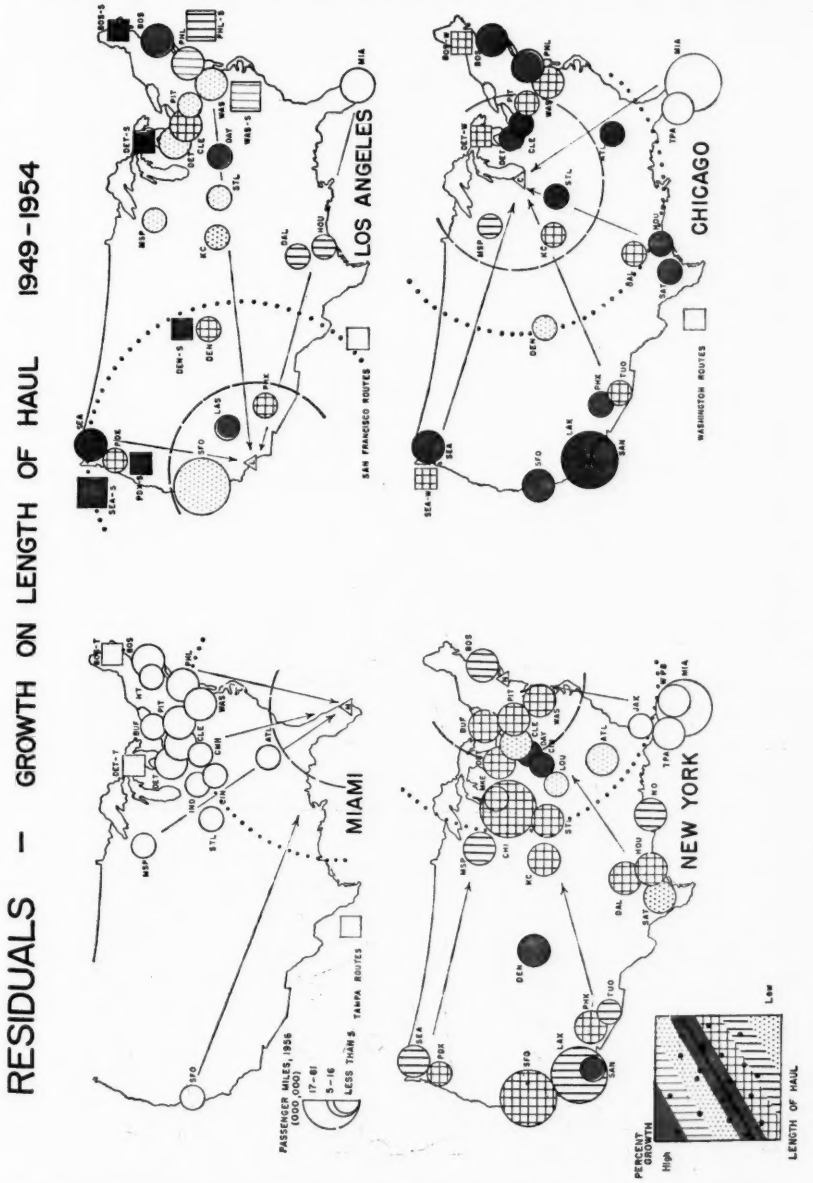

Figure 4 — Residual Deviations from a Regression of Growth on Length of Haul, 1949-1954

route is obviously set apart from the others and ranks with the Florida resort routes in the degree of increase. Dayton traffic on both the New York and the Los Angeles maps is of such magnitude as to indicate the influence of Air Force activities at Wright Field. San Diego traffic on the New York and Chicago maps is high because of the large number

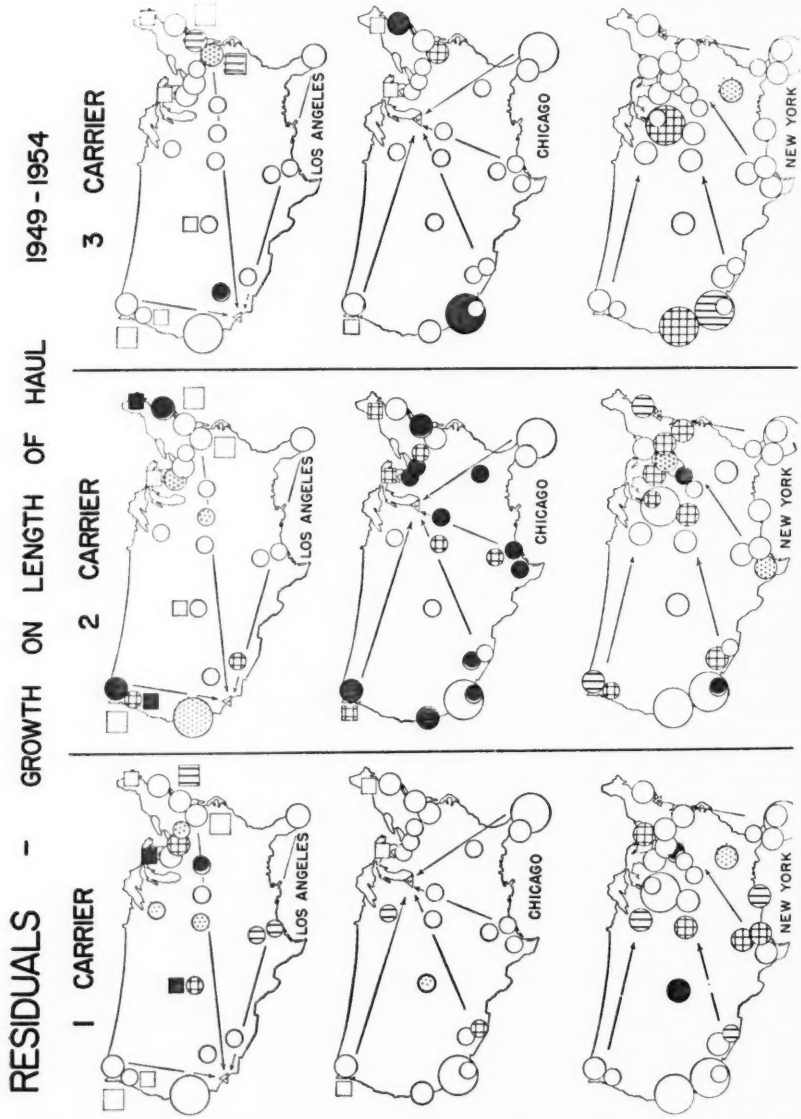

Figure 5 — Residual Deviations from a Regression of Growth on Length of Haul Grouped According to Number of Competitors, 1949-1954

of servicemen utilizing the commercial airlines. Philadelphia traffic growth may be related to improvements in local facilities and services. Specific institutional factors such as airline equipment problems or severe rail competition may also be related to the lows on the map as possibly in the case of Minneapolis-St. Paul traffic to Chicago as well as to New York. It is also interesting to note that California traffic in general seems to show greater growth than would be expected from the average relationship between growth and length of haul. Here too, there is some evidence of the pattern noted on the Florida map. Los Angles traffic to New York and Chicago seem to be increasing less rapidly than that to other Manufacturing Belt cities.

Figure 5 presents these residual variations separated onto three maps according to number of competitors. If the hypothesis of a relationship between growth and number of competitors is correct, there should be a noticeable progression from low to high residuals as one moves fom one- to three-carrier pairs, since the Florida resort traffic has been eliminated and the length of haul effect has been modified. As was anticipated from the scatter diagram there is no clear-cut separation of high and low growth rates. Although lows dominate the one-carrier insets, there is a scattering of highs including such conspicuous monopoly pairs as Los Angeles-Pittsburgh, Chicago-Denver, and New York-Atlanta. On the three-carrier insets, New York-Los Angeles and Chicago-Los Angeles drop out of the high category (see Figure 2) so that the lows provide more of a balance to such highs as those on the Los Angeles map representing traffic between the West Coast, on the one hand, and Philadelphia or Washington on the other. Certain minor qualifications should be noted, however. On the one-carrier, Los Angeles inset, the growth of Los Angeles-Minneapolis traffic may be associated with the fact that this city pair had been certificated for single-carrier service by 1954 as opposed to connecting services in 1949. On the three-carrier, Los Angeles inset, the phenomenal growth of the Los Angeles-Las Vegas resort traffic may be related to some lesser degree with competition. In 1949, Western monopolized this traffic; in 1954, Western, TWA, and United were effective competitors.

An attempt was made to apply analysis of co-variance to these regression residuals but with inconclusive results because of the nature of the data.[16] Adjustment of the average growth rates to compensate for length of haul effects resulted in a somewhat more regular progression; 124 per cent for the one-carrier pairs; 146 for the two-carrier pairs; and 152 for the three-carrier pairs excluding Los Angeles-Las Vegas.

[16] Analysis of covariance is essentially the application of analysis of variance to regression residuals. That is, do the means of the one-, two-, and three-carrier residuals vary significantly between the groups in the light of the amount of variation among the residuals within each group? It is more complicated because differences between groups may be associated with the slope of the regression line as well as with the group means (elevations of the regression lines for each group) and with group variance. Even with the Los Angeles-Las Vegas route excluded, the differences in variance between the three groups were too great to permit an evaluation of the difference in means.

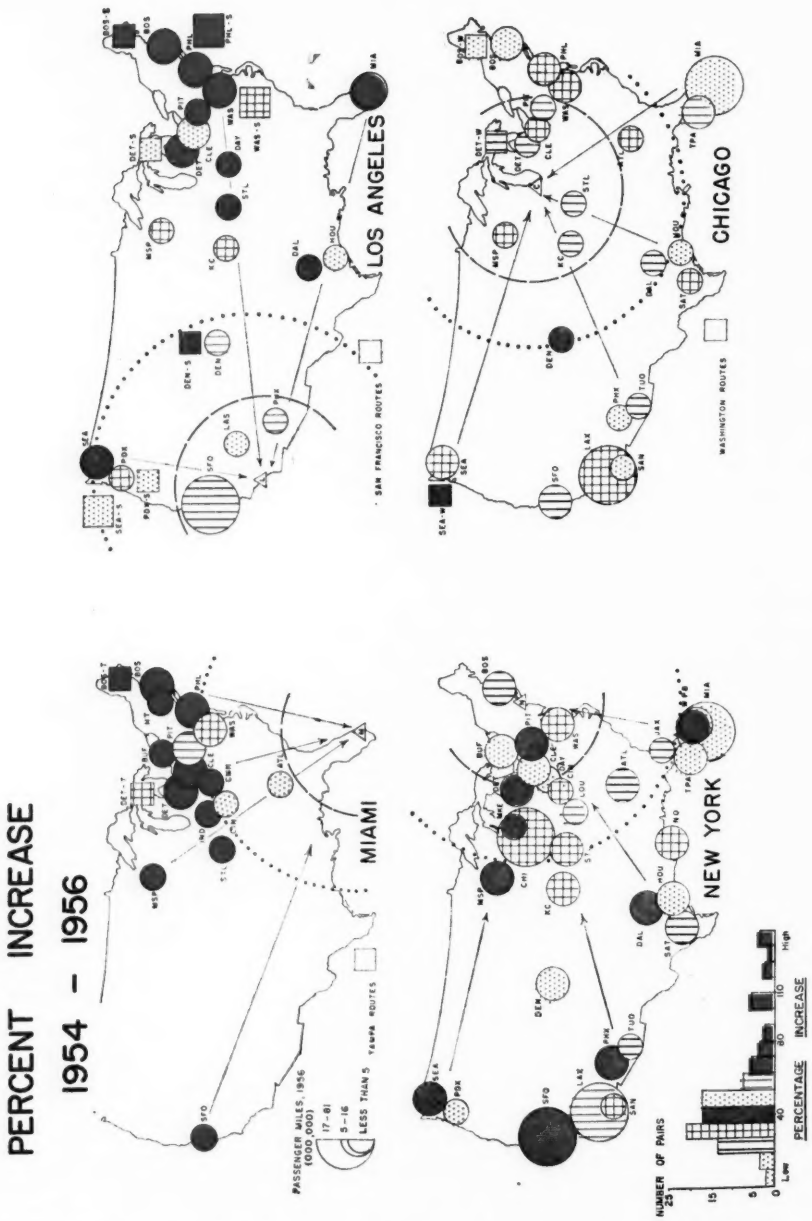

Figure 6 — Percentage Increase in Air Traffic from March and September, 1954 to March and September, 1956

Thus, the net result of the examination of 1949-1954 growth is to indicate the difficulty of isolating possible growth effects of number of carriers on individual routes. No statistically conclusive evidence of a relationship between growth and number of carriers has been discovered although there are interesting progressions in average growth rates.

Traffic Growth from 1954 to 1956

Figure 6 carries the growth rate analysis into the recent period of competitive change, 1954-1956. The growth rate for U. S. total passenger miles was considerably less for this shorter period (39 per cent as compared to 136 per cent). The histogram-legend indicates also that the frequency distribution of growth rates was somewhat more concentrated. The coefficient of variability for the non-resort pairs went from 58 per cent down to 47 per cent. More than half of the New York and Chicago routes had growth rates between 20 and 40 per cent. The legend is again arranged with the shaded pattern centered on the mean (excluding the Florida pairs) and each category is again ½ a standard deviation in width so that the two maps may be effectively compared. The factors noted on the 1949-54 map continued to affect growth during the two-year period of competitive change. Resort traffic continued to grow far more rapidly than other traffic. The Florida resorts have an average rate of increase of 80 per cent on Figure 6 as compared to the total growth rate of 39 per cent. The previously observed contrast between moderately high Florida growth rates on New York and Chicago routes and extremely high rates on newer routes to other Manufacturing Belt Centers, is even more marked on Figure 6 where the Miami-New York and Miami-Chicago routes now have dropped out of the highest category. The different nature of Florida air traffic as compared to other winter resort travel is also more evident on Figure 6, in the contrast between the high rates of growth on the Miami map and the low rates of growth for the Arizona resorts (Phoenix and Tucson) on the New York and Chicago maps.

Statistically, the effects of length of haul seem to bear just about the same weak relationship to the short-term growth on Figure 6 as to the longer term growth on Figure 1. The correlation coefficient is .42 as compared to the previous .40. Map inspection leaves one with the impression that, although the over-all relationship is about the same, individual growth rates display a considerably more erratic progression with distance. This is particularly noticeable on the Chicago map where low growth rates are recorded at the Texas and Arizona cities, as well as at the Arizona resorts. There are also a number of high-increase short-haul city pairs. (On the New York map, note Buffalo, Cleveland, Dayton, and Louisville; Pittsburgh on the Chicago map; Phoenix and Denver on the Los Angeles map.) Table 2 presents the variation with broad distance zones.

Length of Haul (miles)	*Average Growth Rate* (per cent)
Below 500	35
500-1000	37
1000-1500	32
1500-2000	37
Over 2000	51

The drop-off in growth in the 1000 to 1500 mile zone is probably associated with weak growth of Chicago's Texas traffic, as well as New York's Kansas City and New Orleans traffic. It is interesting to note that the hauls of greater than 2000 miles now record a sharply increased growth rate as the West Coast traffic to such Eastern Seaboard centers as Boston, Philadelphia, and Washington grew quite rapidly, possibly with the initiation of non-stop services. It is probable, in fact, that these particular high-growth, long-haul city pairs pulled the correlation coefficient up to its previous level even though the relationship between growth and length of haul visually seems less consistent. The 33 California city pairs still had a somewhat greater average rate of increase than the total increase (49 as compared to 39 per cent) despite the apparent effects of the Western Airlines pilot strike on the Los Angeles and San Francisco traffic to Las Vegas and the Pacific Northwest.

Coach fares are still only weakly related to growth as is indicated in Table 2 in the appendix. The correlation coefficient of .24 is obtained from simple linear regression. Just as previously, this figure is significant at the 5 per cent but not at the 1 per cent level. Among the low coach percentage pairs with high growth rates are New York routes to Buffalo as well as to Dayton; among the high coach percentages with low growth rates are both New York and Chicago routes to the Arizona cities, New York-Atlanta, and Chicago-San Francisco.

Figure 7 shows the growth rates again divided onto three maps according to the number of competitors. Map inspection indicates no consistent difference in growth rates between one-, two-, and three-carrier pairs. On the three-carrier insets there are as many growth rates in below-average categories as there are in above-average categories; on the one-carrier insets there are almost as many in above-average categories as in below-average. This visual impression is supported by the average growth rates. One-carrier pairs average 40 per cent, actually slightly higher than two-carrier pairs which averaged 38 per cent, but less than the 47 per cent recorded for the three-carrier pairs. Analysis of variance tests indicated that the differences between the three groups were statistically insignificant—as were differences between both the one- and three-carrier groups and the two- and three-carrier groups. The relationship between coach percentages and number of competitors also proved statistically insignificant with averages of 33, 33 and 41 for the one-, two-, and three-carrier pairs respectively. Again, the 5 per cent definition of effective competition was applied and again both growth rate and coach variations according to competitive groupings tested as insignificant.

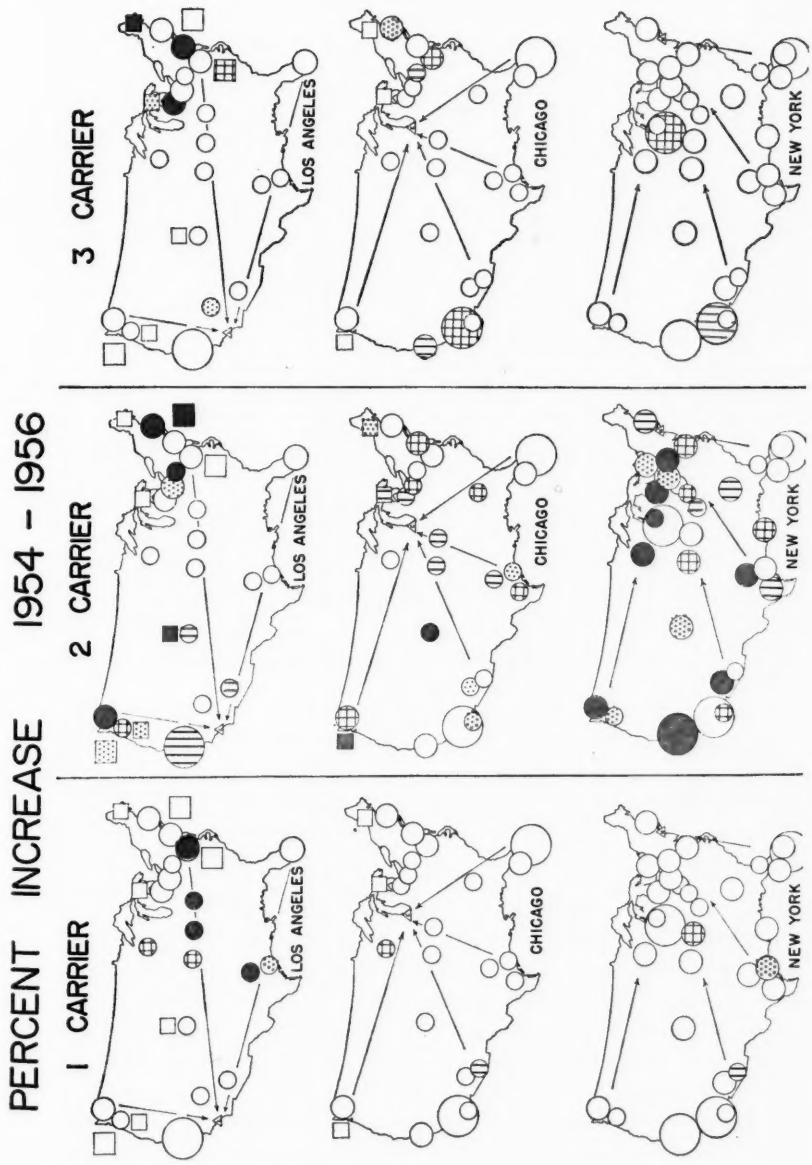

Figure 7 — Percentage Increases for 1954-1956 Grouped According to Number of Competitors

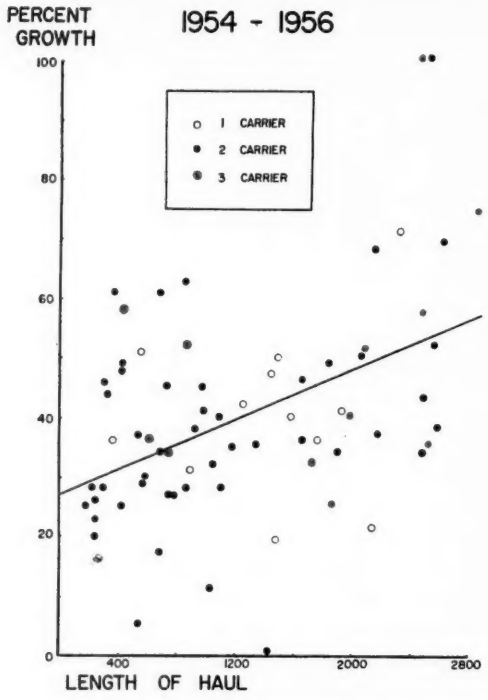

Figure 8 — Regression of Growth on Length of Haul, 1954-1956

Figure 8 is the scatter diagram showing the relationship between growth and length of haul for the 1954-1956 period, and the residual deviations from that relationship. There seems to be less tendency for the one-carrier pairs to cluster below the line and the three-carrier pairs to cluster above the line than was true in the previous period. Figure 9, representing the spatial distribution of the residual variations separated onto maps of one-, two- and three-carrier pairs also indicates the weakness of this tendency.[17] Although there are very few highs on the one-carrier insets, there are correspondingly few highs on the three-carrier insets. Most of the growth rates in excess of what might be expected from the average relationship between growth and length of haul are to be found on the two-carrier insets. Interpretation of growth is again complicated by the fact that a large number of highs seem to be concentrated on the Los Angeles map independently of competitive characteristics. Also, the increased number of two-carrier pairs left the one- and three-carrier groups more susceptible to distortion from the effects of purely institutional factors. Analysis of covariance tests indi-

[17] The regression residuals for 1954-1956 are also categorized into groups of one-half a standard error of estimate so that Figure 9 may be compared with Figure 5, the 1949-1954 residuals map.

cated that the differences between the residual variations of the three groups were not statistically significant. Adjustment of the means to compensate for distance effects, however, did result in a very weak tendency for growth rates to increase with number of competitors: 38.7

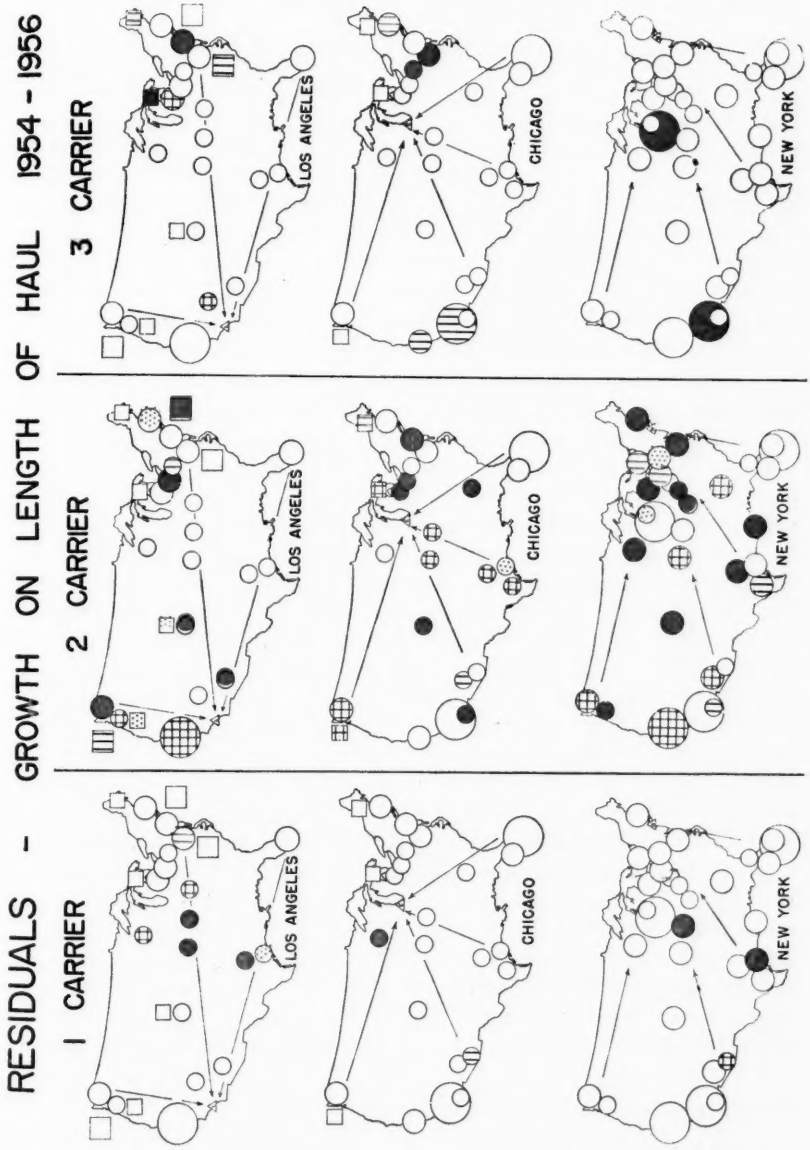

Figure 9 — Residual Deviations from a Regression of Growth on Length of Haul Grouped According to Number of Competitors, 1954-1956

for one-carrier pairs; 39.4 for two-carrier pairs; 44 for three-carrier pairs. The net result of the examination of 1954-1956 growth rates, however, is a failure to uncover indications of a relationship between rate of growth and number of competitors. If anything, this lack of relationship is indicated more strongly by the 1954-1956 data, since there is less contradictory evidence than was true in the 1949-1954 case.

Traffic Growth on the Competitive-Increase Pairs

The next step in evaluating the relationship between growth and competition among the leading city pairs is to consider separately the growth rates of those city pairs which have experienced an increase in competition. Twenty-one of the 75 non-resort pairs were designated as competitive-increase pairs. Seventeen of these were city pairs on which an additional competitor had more than doubled its share of the market to attain a total of ten per cent. The other four include those on which the additional competitor had more than doubled its share to reach 5 per cent. It should also be noted that competitive increases at nearly all of these pairs were the result of the 1955-1956 CAB decisions.

Growth rates of the competitive-increase pairs for 1949-1954 and 1954-1956 are presented on Figure 10. The categories used are the same as in the two growth maps. Since each category represents one-half a standard deviation the two insets in Figure 10 are comparable in terms of dispersion from the mean. Preliminary inspection of these maps suggests that at this point in the investigation signs begin pointing to a possible relationship between growth and competition. Some of the city pairs previously cited as having unusually high growth rates for their distance zone or coach percentage[18] are seen to be city pairs which have experienced competitive increase. In terms of specific growth rates on the maps it might be noted that the competitive-increase pairs which grew most rapidly between 1954 and 1956 included a number involved in the pattern of reciprocal awards whereby TWA and United Air Lines entered a number of each other's markets[19] (New York to Cleveland and to Denver; Chicago to Pittsburgh; Los Angeles to Pittsburgh and to Denver) ; and the New York-Buffalo market where Capital's Vicker's Viscount has apparently had an unusual impact.[20]

Analysis of variance was then applied to the difference in growth rates between the 21 competitive-increase pairs and a control group consisting of the 54 non-resort pairs which did not experience an increase in competition. In both cases, the differences tested as insignificant. In the 1949-54 case, the average for the competitive-increase group was 124 per cent, appreciably lower than the 150 per cent recorded for the control group. In the 1954-56 case, however, the average

[18] Notably Buffalo and Cleveland on the New York map, Pittsburgh on the Chicago map, Denver on the Los Angeles map.

[19] See Taaffe, *op. cit.*, pages 134 and 138. These compensatory awards are indicated correctly on the maps although the omission of an entire line from the text on p. 142 results in a misleading statement with reference to the individual routes concerned.

[20] Taaffe, *op. cit.*, pages 137 and 141.

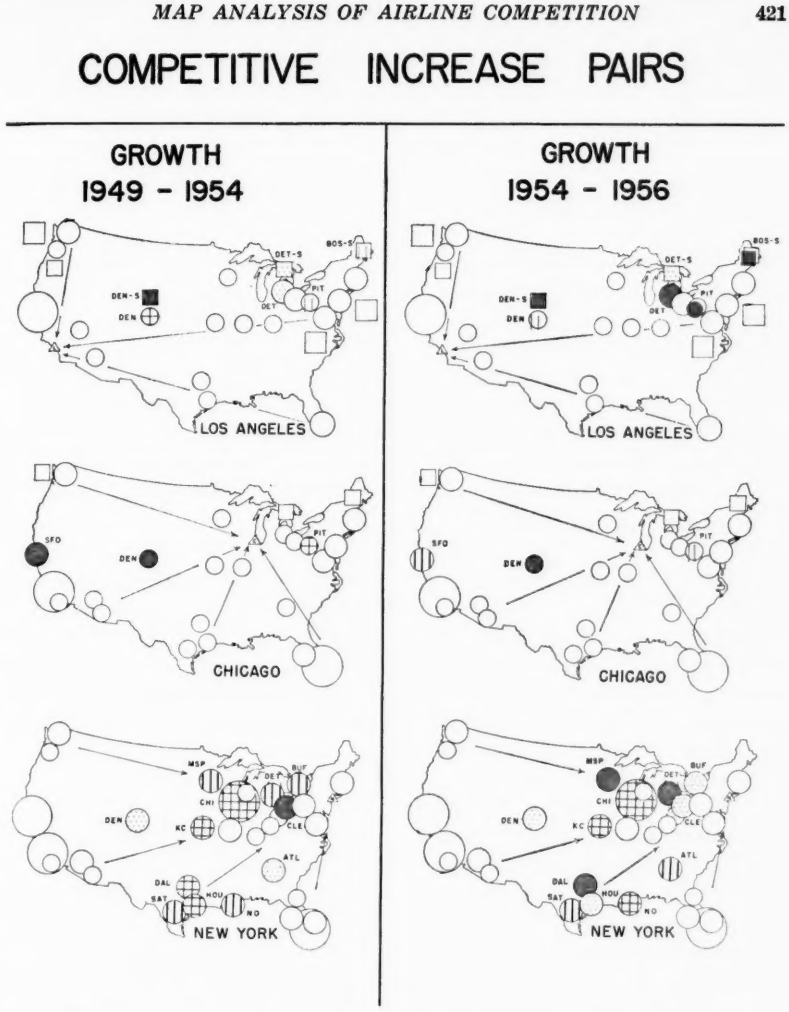

Figure 10 — Percentage Increases for Competitive-Increase Pairs, 1949-1954 and 1954-1956

for the competitive-increase group was 43.90 per cent, as opposed to 38.57 per cent for the control group. Despite the fact that this difference in means could not be regarded as statistically significant in the light of the amount of variation still present within each of these groups, it is a matter of considerable interest to note how the competitive-increase group had improved its position relative to the control group. This shows up on the map in the form of the many competitive-increase city pairs which moved into higher growth-rate categories in 1954-1956. Particularly striking examples are New York-Buffalo, Chicago-Pittsburgh and Los Angeles-Denver, each of which moved up three

growth-rate categories. Eleven of the competitive-increase pairs moved to a higher category while only three moved to a lower category. Differences in coach fare percentages also tested as insignificant in both study periods. Here too the average for the competitive-increase group went from slightly below to slightly above that of the control group. The differences were not as marked as in the case of growth rates, however.

Examination of residuals for the 21 competitive-increase pairs led to similar conclusions. Changes on work maps were so slight in magnitude that no presentation map was deemed necessary. This indicates that differences in growth associated with length of haul do not affect either: (a) the fact that the average growth rates of the competitive-increase pairs do not differ in a statistically significant fashion from the average growth rates of the control group; or (b) the fact that the average for the competitive-increase pairs has gone from appreciably below to somewhat above that of the control group.

Summary

On balance, it seems reasonable to say that this examination of the traffic characteristics of the 99 leading city pairs has not conclusively demonstrated that there is a relationship between air traffic growth and airline competition, or between the offering of effective coach services and airline competition. To this extent the findings are similar to those of the previous studies. The observation of individual city pairs on the map and the contradictory implications of some of the measures, however, leads to considerably more equivocal findings regarding competition and growth than was true in the other cases. There has been enough doubt cast on the broad statement above to warrant the inclusion of several important qualifications. First, although the findings were largely negative for comparisons involving one-, two-, and three-carrier pairs they had important positive aspects for competitive-increase pairs. This leads one to postulate a possible difference between the initial impact of added competition and longer-term effects. It is possible that a significant amount of new traffic is generated by the entry of a new carrier but that this effect levels off after a period of time so that there is no measurable relationship between rate of growth and number of competitors. Secondly, there is enough conflicting evidence in the longer term case (particularly 1949-1954) to provide fuel for speculation as to the effects of competition being temporarily submerged during the periods considered, when the nation's travel habits were apparently undergoing a large-scale change. A circumspect conclusion in this regard might be that the weight of evidence to date points to the difficulty of isolating any possible relationship between rate of growth and number of competitors. A third qualification to the broad general conclusion is that growth in air travel is spotty and erratic when observed over individual routes. This becomes something more than a truism when one considers that

the CAB must make use of individual routes in implementing its efforts to promote competition. The contrast in the traffic reaction of different city pairs to the addition of a carrier is associated with the many institutional factors evident from the maps. In addition to length of haul and Florida resort travel, a particular growth rate may be greatly affected by an individual airline's equipment policy, severe rail competition, unusual travel to such cities as Los Angeles and San Francisco, service-connected travel, etc. Rather than assume that all these disturbances will neatly cancel out, it seems useful to note the more conspicuous of these factors in order to attain a suitable degree of disenchantment with the resulting generalizations—and to be particularly cautious about taking a few selected city pairs as being typical exemplifications of competitive or other effects. Then too, certain of these apparently institutional factors may prove to be of such a nature as to be susceptible of ultimate systematization thereby refining, strengthening and quite possibly altering, the generalizations.

Thus, an empirical examination of the 100 leading city pairs has led to certain broad conclusions regarding the relationship between airline competition and air traffic. From the first part of the study it could be concluded that the entry of a new carrier often but not always accompanied a sizable percentage diversion of traffic. It was also noted that recent awards have favored the expansion of regional carriers into Big Four markets. This reduced the disproportionate Big Four share of the premium markets and created, at least initially, a pattern dominated by two-carrier, effective competition if one were to use the 10 per cent criterion. The latter portion of the study indicated that the effects of competition in stimulating growth and effective low-fare service over specific routes must still be considered as unproven, although some statistically inconclusive evidence did suggest that at least the initial impact of added competition does produce above-average growth rates.

The fact that there is considerable evidence of competitive diversion coupled with the lack of evidence that competition stimulates growth over individual routes would seem to indicate that the original carriers have experienced traffic losses with the entry of a new carrier. This, of course, is not necessarily the case. It is quite possible that the original carrier may have had its percentage share of the market reduced on a route with below-average traffic growth and still experienced an absolute increase in passengers carried due to the great increase in over-all air traffic. It might even be argued that such over-all traffic growth might have been stimulated by the effects of a generally more competitive airline industry in the form of better services, more national advertising, accelerated equipment innovation, etc. On the other hand, it should also be noted that even if an original carrier had gained an absolute increase over a particular route in the face of increased competition, this might have been accomplished only with a disproportionately great increase in scheduled seats. Thus, a close examination of

changes in load factors on competitive-increase routes would seem to be a requisite to an evaluation of the harmful economic effects of added competition on original carriers. Even with load factor information, however, many complicating factors would remain, such as a possible increase in coach percentages, greater promotional expenditure, or system-wide economic repercussions of diversion of equipment from other routes. Possible avenues of further investigation might include the use of more complete data (including schedule and cost estimate data) [21] which would necessitate more refined analytical tools, or the use of case studies so as to facilitate detection of the specific means whereby competitive diversion or unusually rapid growth are brought about on selected individual routes.[22] Experimentation with other definitions of competition, and closer examination of the growth characteristics of competitive-increase pairs over longer periods of time should also aid continued efforts of investigators to arrive at objective evaluations of the effects of airline competition.

APPENDIX

The following tables represent the data from which the growth maps were made. For each city pair the first-named city represents the map on which the pair has been plotted.

TABLE 1

City Pair	*Percentage Increase 1949-1954*	*Percentage Coach Passengers 1954*	*Length of Haul*	*Effective Competitors 1954*
Map Category: Red (A growth rate of 241 per cent or more)				
1. Miami-Hartford	732	—	1,192	1
2. Miami-Philadelphia	544	80	1,017	2
3. Los Angeles-Las Vegas	521	37	248	3
4. Miami-Buffalo	488	—	1,392	0
5. Miami-Pittsburgh	463	39	1,108	1
6. Miami-Detroit	392	34	1,196	1
7. Tampa-Detroit	391	49	1,044	1
8. Los Angeles-Dayton	366	—	1,926	1
9. Miami-Cleveland	350	48	1,091	1
10. Miami-St. Louis	314	49	1,073	1
11. Chicago-San Diego	310	56	1,860	2
12. Los Angeles-Boston	307	54	2,610	2
13. Miami-Minn.-St. Paul	293	14	1,536	0
14. Chicago-Phoenix	288	25	1,446	2
15. New York-San Diego	283	39	2,467	2
16. Chicago-Miami	280	68	1,186	2
17. Los Angeles-Philadelphia	279	44	2,451	3
18. Miami-Cleveland	273	54	952	1
19. Miami-San Francisco	273	20	3,042	0
20. San Francisco-Washington	269	37	2,515	3
21. Miami-Columbus	261	—	1,067	1
22. Miami-Indianapolis	255	—	1,030	1
23. New York-Dayton	246	—	549	1
24. New York-Miami	243	57	1,100	2

[21] For example, the useful data being developed by Samuel B. Richmond in "Creating Competition Among Airlines," JOURNAL OF AIR LAW AND COMMERCE, XXIV, (Autumn, 1957) pages 435-464, should provide an excellent basis for critical evaluation of some of the tentative generalizations put forth in this study.

[22] Some work of this sort being carried on at the Transportation Center by George Post and Arthur Hurter on selected routes is producing further insights into the institutional complexity of the demand for air travel.

TABLE 1 — (Continued)

City Pair	Percentage Increase 1949-1954	Percentage Coach Passengers 1954	Length of Haul	Effective Competitors 1954
Map Category: Red Lines (201 to 240.5 per cent)				
25. Chicago-Philadelphia	230	26	671	2
26. Chicago-Tampa	229	43	1,001	1
27. Los Angeles-Washington	225	34	2,331	3
28. San Francisco-Boston	223	46	2,881	2
29. Tampa-Boston	220	38	1,356	1
30. Los Angeles-Minn.-St. Paul	219	49	1,773	1
31. Los Angeles-Pittsburgh	218	56	2,155	1
32. Los Angeles-St. Louis	203	66	1,596	2
33. Los Angeles-Miami	202	6	2,590	0
Map Category: Red Dots (161 to 200.5 per cent)				
34. Los Angeles-Detroit	198	26	1,970	2
35. Chicago-Los Angeles	182	59	1,751	3
36. New York-Atlanta	181	43	762	1
37. New York-Los Angeles	178	47	2,475	3
38. New York-Tampa	174	56	1,172	2
39. New York-West Palm Beach	170	8	1,038	2
40. New York-Denver	166	24	1,632	1
41. Washington-Seattle	166	21	2,496	2
42. Chicago-Seattle	162	37	1,896	2
43. New York-Portland	161	28	2,552	2
Map Category: Gray Shading (121 to 160.5 per cent)				
44. New York-Jacksonville	160	61	839	2
45. San Francisco-Detroit	160	22	2,064	1
46. Chicago-San Francisco	157	50	1,856	2
47. New York-San Francisco	150	43	2,580	3
48. Chicago-Denver	150	27	909	1
49. New York-Louisville	149	16	688	3
50. New York-Phoenix	147	39	2,167	2
51. Los Angeles-Seattle	142	26	964	2
52. Chicago-San Antonio	142	53	1,045	2
53. Los Angeles-San Francisco	140	48	340	2
54. Chicago-Boston	138	31	859	3
55. San Francisco-Philadelphia	138	41	2,525	1
56. New York-Cleveland	136	13	417	2
57. Los Angeles-Cleveland	130	16	2,058	1
58. Miami-Washington	126	24	922	2
59. Chicago-Tucson	126	60	1,487	1
60. New York-Seattle	122	41	2,620	2
61. Chicago-Atlanta	122	26	592	2
62. Miami-Atlanta	122	42	598	2
63. San Francisco-Denver	121	28	956	1
Map Category: Black Cross-Hatch (81 to 120.5 per cent)				
64. Chicago-Cleveland	116	7	307	2
65. Chicago-Houston	115	12	1,036	2
66. San Francisco-Seattle	113	32	687	2
67. New York-Dallas	113	22	1,381	1
68. New York-Kansas City	104	37	1,104	1
69. San Francisco-Portland	104	24	549	2
70. Chicago-Detroit	104	8	219	2
71. Los Angeles-Portland	103	26	832	2
72. New York-Houston	101	29	1,430	1
73. New York-Cincinnati	97	—	585	2
74. New York-Chicago	96	34	724	3
75. New York-St. Louis	92	29	888	2
76. Chicago-Dallas	91	16	795	2
77. New York-Tucson	91	41	2,134	1
78. Los Angeles-Denver	90	15	849	1
79. Los Angeles-Houston	87	7	1,486	0
80. Chicago-Washington	87	25	600	4
81. Chicago-Pittsburgh	82	8	420	2
82. Chicago-St. Louis	81	3	251	2
Map Category: Black Lines (41 to 80.5 per cent)				
83. Washington-Detroit	78	24	415	2
84. New York-Buffalo	77	—	292	1

TABLE 1 — (Continued)

City Pair	Percentage Increase 1949-1954	Percentage Coach Passengers 1954	Length of Haul	Effective Competitors 1954
85. New York-Pittsburgh	75	22	320	2
86. New York-Detroit	71	19	511	2
87. Washington-Boston	71	15	349	2
88. Los Angeles-Dallas	69	42	1,245	1
89. New York-New Orleans	64	43	1,186	1
90. New York-Milwaukee	62	20	739	2
91. Los Angeles-Phoenix	60	23	368	2
92. Chicago-Kansas City	55	27	405	2
93. New York-Washington	49	10	215	2
94. New York-San Antonio	47	41	1,631	2
95. New York-Minn.-St. Paul	46	20	1,080	1
Map Category: Black Dots (less than 40.5 per cent)				
96. Miami-Boston	19	60	1,284	1
97. Chicago-Minn.-St. Paul	14	21	350	1
98. New York-Boston	11	11	184	2
99. Los Angeles-Kansas City	9	61	1,368	1

TABLE 2

City Pair	Percentage Increase 1954-1956	Percentage Coach Passengers 1956	Length of Haul	Effective Competitors 1956
Map Category: Red (A growth rate of 64 per cent or more)				
1. Miami-Detroit	149	37	1,196	1
2. Tampa-Boston	146	38	1,356	1
3. Miami-Hartford	138	—	1,192	1
4. Miami-Columbus	129	—	1,067	1
5. Miami-Boston	128	60	1,284	1
6. San Francisco-Philadelphia	119	55	2,525	2
7. Los Angeles-Miami	107	36	2,590	0
8. Los Angeles-Philadelphia	102	62	2,451	3
9. Miami-Philadelphia	100	90	1,017	2
10. Miami-Minn.-St. Paul	100	6	1,536	0
11. Miami-Indianapolis	86	46	1,030	1
12. Miami-Buffalo	83	38	1,392	0
13. New York-West Palm Beach	81	31	1,038	2
14. Miami-San Francisco	79	37	3,042	0
15. San Francisco-Boston	74	47	2,881	3
16. Miami-St. Louis	72	66	1,073	1
17. Los Angeles-Washington	71	35	2,331	1
18. Los Angeles-Boston	69	49	2,610	2
19. Los Angeles-Pittsburgh	67	54	2,155	2
20. Miami-Cleveland	67	51	1,091	1
Map Category: Red Lines (55 to 63.5 per cent)				
21. Los Angeles-Denver	63	42	849	2
22. Miami-Pittsburgh	61	55	1,108	1
23. Los Angeles-Phoenix	61	39	368	2
24. New York-Louisville	61	22	688	2
25, Chicago-Tampa	58	60	1,001	1
26. Chicago-Pittsburgh	58	20	420	3
27. New York-Los Angeles	57	51	2,475	3
Map Category: Red Dots (46 to 54.5 per cent)				
28. New York-Portland	52	40	2,552	2
29. Chicago-Boston	52	27	859	3
30. San Francisco-Detroit	51	40	2,064	3
31. New York-Dayton	51	9	549	1
32. New York-Tampa	50	63	1,172	2
33. Los Angeles-Cleveland	50	38	2,058	2
34. Los Angeles-Houston	50	33	1,486	0
35. Chicago-San Diego	49	68	1,860	2
36. Chicago-Miami	49	68	1,186	2
37. New York-Cleveland	49	22	417	2
38. Miami-Cincinnati	48	59	952	1

TABLE 2 — (Continued)

City Pair	*Percentage Increase 1954-1956*	*Percentage Coach Passengers 1956*	*Length of Haul*	*Effective Competitors 1956*
39. Miami-Atlanta	48	38	598	2
40. New York-Miami	47	72	1,100	2
41. New York-Houston	47	31	1,430	1
42. Washington-Boston	47	18	349	2
43. New York-Denver	46	40	1,632	2
44. New-York-Buffalo	46	5	292	2
Map Category: Gray Shading (37 to 45.5 per cent)				
45. San Francisco-Denver	45	46	956	2
46. New York-Milwaukee	45	26	739	2
47. New York-Dallas	45	22	1,381	2
48. New York-Pittsburgh	44	24	320	2
49. Washington-Seattle	43	33	2,496	2
50. Los Angeles-Dallas	42	28	1,245	1
51. New York-Seattle	41	46	2,620	2
52. Los Angeles-Seattle	41	26	964	2
53. Los Angeles-Dayton	41	10	1,926	1
54. Los Angeles-St. Louis	40	55	1,596	1
55. Los Angeles-Detroit	40	46	1,970	3
56. New York-Minn.-St. Paul	40	24	1,080	2
57. New York-San Francisco	38	48	2,580	2
58. Chicago-Denver	38	41	909	2
59. New York-Phoenix	37	55	2,167	2
60. New York-Detroit	37	25	511	2
Map Category: Black Cross-Hatch (28 to 36.5 per cent)				
61. Los Angeles-Kansas City	36	61	1,368	1
62. Los Angeles-Minn.-St. Paul	36	30	1,773	1
63. Chicago-Washington	36	27	600	3
64. Chicago-Minn.-St. Paul	36	10	350	1
65. San Francisco-Washington	35	37	2,515	3
66. New York-New Orleans	35	37	1,186	2
67. Miami-Washington	34	57	922	2
68. New York-San Diego	34	55	2,467	2
69. Chicago-Seattle	34	48	1,896	2
70. Chicago-Philadelphia	34	34	671	2
71. New York-Chicago	34	34	724	3
72. Chicago-Los Angeles	32	56	1,751	3
73. Chicago-San Antonio	32	56	1,045	2
74. New York-St. Louis	31	29	888	1
75. New York-Cincinnati	30	—	585	2
76. Chicago-Atlanta	29	38	592	2
77. Tampa-Detroit	29	50	1,044	1
78. New York-Kansas City	28	34	1,104	2
79. Los Angeles-Portland	28	25	832	2
80. New York-Washington	28	16	215	2
81. Chicago-Cleveland	28	5	307	2
Map Category: Black Lines (19 to 27.5 per cent)				
82. New York-Atlanta	27	43	762	2
83. Chicago-Dallas	27	14	795	2
84. New York-San Antonio	26	47	1,631	2
85. Chicago-Detroit	26	15	219	2
86. Chicago-San Francisco	25	50	1,856	3
87. New York-Boston	25	11	184	2
88. Chicago-Kansas City	25	31	405	2
89. New York-Jacksonville	24	55	839	2
90. New York-Tucson	24	43	2,134	1
91. Los Angeles-San Francisco	23	51	340	2
92. Washington-Detroit	23	14	415	2
93. Chicago-St. Louis	20	5	251	2
94. Chicago-Tucson	19	50	1,487	1
Map Category: Black Dots (less than 18.5 per cent)				
95. San Francisco-Seattle	17	32	687	2
96. Los Angeles-Las Vegas	16	35	248	3
97. Chicago-Houston	11	10	1,036	2
98. San Francisco-Portland	5	30	549	2
99. Chicago-Phoenix	—12	57	1,446	2

THE AIR NAVIGATION COMMISSION OF THE INTERNATIONAL CIVIL AVIATION ORGANIZATION*

Part II

A Study of Its Functions and Powers and an Outline of Its Main Fields of Activity

By Menachem Sheffy
LL.M., The Hebrew University, Jerusalem, 1954

VI. Technical Regulatory Material

A. *Annexes*

Annexes, that is, International Standards and Recommended Practices, and the Organization's regulatory material of the highest status. The adoption and promulgation of Annexes are governed by the Convention. Article 37 of the Convention provides for the promulgation of Annexes as follows:

> Each contracting State undertakes to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation.
>
> To this end the International Civil Aviation Organization shall adopt and amend from time to time, as may be necessary, international standards and recommended practices and procedures dealing with:
>
> (a) Communications systems and air navigation aids, including ground marking;
> (b) Characteristics of airports and landing areas;
> (c) Rules of the air and air traffic control practices;
> (d) Licensing of operating and mechanical personnel;
> (e) Airworthiness of aircraft;
> (f) Registration and identification of aircraft;
> (g) Collection and exchange of meterological information;
> (h) Log books;
> (i) Aeronautical maps and charts;
> (j) Customs and immigration procedures;
> (k) Aircraft in distress and investigation of accidents;
>
> and such other matters concerned with the safety, regularity, and efficiency of air navigation as may from time to time appear appropriate.[245]

All but one of the above listed matters are in the field of air navigation; customs and immigration procedures may be considered matters

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[245] Chicago Convention, Article 37.

of air transport. Hence Annexes are almost exclusively concerned with air navigation. Even Annexes developed to deal with matters not listed in the above Article are to fall within the category of air navigational material.

The responsibility with respect to Annexes rests with the Council, one of its mandatory functions being the adoption of Annexes and notification to all contracting States of the action taken.[246]

The procedure for the adoption of Annexes is also laid down by the Convention as follows:

> (a) The adoption by the Council of the Annexes described in Article 54, subparagraph (1), shall require the vote of two-thirds of the Council at a meeting called for that purpose and shall then be submitted by the Council to each contracting State. Any such Annex or any amendment of an Annex shall become effective within three months after its submission to the contracting States or at the end of such longer period of time as the Council may prescribe, unless in the meantime a majority of the contracting States register their disapproval with the Council.
> (b) The Council shall immediately notify all contracting States of the coming into force of any Annex or amendment thereto.[247]

The obligations of contracting States with respect to Annexes are covered by Article 28 of the Convention applicable to all regulatory material referring to air navigation. Under this Article, contracting States undertake, in so far as they find practicable, to implement the technical legislation of the Organization. However, with regard to Standards, States are under obligation to report deviations, as indicated in Article 38 reading:

> Any State which finds it impracticable to comply in all respects with any such international standards or procedure, or to bring its own regulations or practices into full accord with any international standard or procedure after amendment of the latter, or which deems it necessary to adopt regulations or practices differing in any particular respect from those established by an international standard, shall give immediate notification to the International Civil Aviation Organization of the differences between its own practice and that established by the international standard.[248]

KEY TO THE SYMBOLS FOR ICAO DOCUMENTS LISTED IN FOOTNOTES

A—Assembly
AN, ANC—Air Navigation Commission
C—Council
Doc—Document
P—Plenary Session
Rec.—Recommendation
TE—Technical Commission of Assembly
WP—Working Paper

A combination of the above symbols should be interpreted as illustrated in the following examples:

A1-1—First Assembly Resolution 1
A4-Rec. 4—Fourth Assembly Recommendation 4
A10-WP/20, TE/6—Tenth Assembly Working Paper, Technical Commission, sixth meeting
A10-WP/148, P/15—Tenth Assembly Working Paper, number 148, fifteenth plenary meeting
C-WP/2040—Council Working Paper 2040

Minutes of the Air Navigation Commission are designated as Working Papers:

AN-WP/MIN, X-20—Air Navigation Commission Minutes, Tenth Session, twentieth meeting

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[246] Chicago Convention, Article 54(1).
[247] Chicago Convention, Article 90.
[248] Chicago Convention, Article 38.

The material of which Annexes are comprised is divided into two categories, that of Standards and that of Recommended Practices, which by definition have different status, although both of them are applicable in the same manner and call for the same procedures of adoption and amendment. A "Standard" by definition is:

> . . . any specification for physical characteristics, configuration, materiel, performance, personnel, or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which Member States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38 of the Convention.[249]

A "Recommended Practice" is defined in the very same terms with two crucial differences:

(1) A Recommended Practice is recognized as "desirable" for the safety or regularity of international air navigation; it is not recognized as "necessary," as is a Standard; and

(2) States are required to ". . . endeavor to conform in accordance with the Convention."[250] The compulsory notification under Article 38 of the Convention is not mentioned.

Thus, a Recommended Practice may be viewed as of somewhat lesser importance than a Standard, though both categories of specifications are embodied in one document termed "Annex" to the Convention, for the sake of convenience.

Although Standards and Recommended Practices are designated as Annexes to the Convention, it should not be assumed, once approved and accepted, they acquire a status similar to the provisions of the Convention. The adoption of Annexes is a unilateral act of the Council, while international treaties are usually formulated by the signatory States. Furthermore, Annexes do not require formal ratification by States, their very nature demanding more flexible methods for their coming into force.

The Convention is not perfectly clear as to the status of Annexes. The present President of the Council briefly stated the problem involved in determining their status in this way:

> The attachment of provisos on technical standards to an international agreement creates some interesting legal problems. The permanent Convention will have the form of a treaty; but nations could scarcely be expected to ratify a document which might be greatly changed without renewed reference to the ratifying authorities. Yet the arts of aircraft design and air navigation are constantly developing, and standards governing them must obviously be kept highly flexible. Hope of keeping the standards up to date would disappear if they were to be incorporated in the Convention and fresh ratification by all the participating governments were required whenever a change were made. The expedient chosen was to give the permanent Council full power to adopt, amend or annul technical annexes to the Convention at any time by a two-thirds

[249] First Assembly Resolution A1-31, ICAO Doc 7670, p. 26.
[250] Ibid.

> vote; but those annexes are not to be given compulsive force. There will be no binding obligation on any nation to keep to an international standard.[251]

Evidently, Annexes are international regulations of an unusual character. The following elements with respect to Annexes should be noted:

(1) Annexes are in no way international treaties requiring formal ratification.

(2) Annexes are, in effect, recommendations of the greatest importance directed by the Council to contracting States.

(3) The basic objective of Annexes is to achieve uniformity in measures promoting safety, regularity and efficiency in air navigation on a worldwide scale.

(4) Although Annexes have no compulsive force, States are obliged to report to the Council any departures from Standards. It is doubtful whether the same obligation exists with respect to Recommended Practices.

(5) Annexes may be annulled or amended by the Council unilaterally. This is another point indicating that Annexes are not international treaties, the latter not being instruments which can normally be revoked unilaterally by one of the parties.

(6) Annexes come into force three months after being submitted to contracting States, ". . . or at the end of such longer period of time as the Council may prescribe, unless in the meantime a majority of the contracting States register their disapproval with the Council."[252] It is noteworthy that disapproval of an Annex has to be actively demonstrated, and that lack of response from a State may be interpreted as tacit agreement. It is, however, not clear whether silence on the part of States implies acceptance of the Annex or whether disapproval of an Annex is the same as a departure under Article 38 of the Convention.

Let us examine first the question of when an Annex "becomes effective" and what this term implies. Article 90 of the Convention presents a difficulty in this respect, since it is inconsistent semantically regarding the use of the term applying to the time an Annex becomes formally effective. Paragraph (a) of the Article uses the expression "become effective," while paragraph (b) of the same Article decrees that "The Council shall immediately notify all contracting States of the coming into force of any Annex or amendment thereto."[253] This discrepancy presents a problem as to the intention of the drafters of the Convention. Does the term "become effective" in paragraph (a) mean that an Annex formally comes into force after the lapse of time specified in that paragraph, independently of Council notification to

[251] Edward Warner, "The Chicago Air Conference," *Blueprint for World Civil Aviation, Publication* 2348, Conference Series 70, Department of State (Washington, 1945), p. 24.

[252] Chicago Convention, Article 90(a).

[253] Ibid., Article 90(b).

contracting States, or is such notification an essential element? The Commission was of the opinion that both terms used were identical in their meaning.[254] If this is the case, paragraph (b) has no effect on the validity of an Annex adopted by the Council pursuant to paragraph (a) of Article 90, constituting only a directive to the Council. The "Revised Form of Resolution of Adoption of an Annex" adopted by the Council[255] considers the terms "become effective" and "coming into force" identical, discarding the latter term and employing the former.[256]

The question of how and when contracting States should report to the Council departures from Standards was another point that required clarification and a practical solution. Article 38 provides that States ". . . shall give immediate notification to the International Civil Aviation Organization of the differences between its own practice and that established by the international standard."[257] The Article leaves us in darkness as to the meaning of the word "immediate." Does it mean that States should report differences promptly after adoption of an Annex by the Council, or only after the Annex becomes effective? The Council recognized the difficulties involved for contracting States by establishing an additional date, the date of applicability of the Standards and Recommended Practices included in the Annex. A different date of applicability might be set of each separate Standard and Recommended Practice. This method was devised in order to avoid the reporting of differences by States for the sole reason that the latter found the time allotted for implementation insufficient.

Article 38 of the Convention lists three cases of non-compliance requiring notification, as follows:

(a) Non-compliance resulting from a State finding it ". . . impracticable to comply in all respects with any such international standards or procedure. . . ."[258]

(b) Non-compliance resulting from the inability of a State ". . . to bring its own regulations or practices into full accord with any international standard or procedure after the amendment of the latter. . . ."[259]

(c) Non-compliance resulting from adoption by a State of regulations differing from those established by an International Standard.

Unfortunately, this important Article is worded in a way which renders it unclear. Case (b) above refers to amendments of International Standards and Recommended Practices, which are dealt with later in this section. Presumably, notification is required under cases (a) and (b) whenever a departure from "international standard or procedure" occurs. Case (c) requires notification only where the departure occurs with respect to an "international standard." The Con-

254 ICAO AN-WP/MIN, VII-10(25/6/51), paragraph 23.
255 ICAO Doc 7361-15(Open), C/858-15(23/4/53), Appendix "A," p. 199.
256 Ibid., paragraphs 2 and 4(i).
257 Chicago Convention, Article 38.
258 Chicago Convention, Article 38.
259 Ibid.

vention does not define international standards and procedures. Neither does it define Recommended Practices. Hence we must presume that their definition was left to the Organization. The Organization did adopt definitions of Standards and Recommended Practices[260] and the question now arises whether we should read case (c) as implying that notification of differences is required only when the departure is from "Standards" as defined by the Organization, or whether the term "international standard" does not have any specific technical meaning but refers to technical regulations of the Organization in general. A practical solution was found by specifying which regulations required notification of differences and which differences should be reported. A further simplification was the introduction of a practice that makes notification a general requirement for Standards and Recommended Practices and Procedures for Air Navigation Services, whenever such departures affect the safety or regularity of international civil aviation.[261] Even Supplementary Procedures require notification, though they cannot be considered as international in character.[262]

Pursuant to resolutions of the Assembly,[263] simplified procedures for the reporting of differences were evolved. Annexes were to be accompanied by a memorandum ". . . analyzing the types of differences to be reported and indicating the form in which the notification of differences was desired."[264]

It should be stressed that the notification of differences, in itself, does not constitute a rejection of a Standard, but serves more as a point of information, enabling States and the Organization to learn to what extent uniformity exists and where, geographically, departures occur.

The question of notification of differences is closely connected with the implementation or non-implementation of ICAO's regulations. For some time the Organization adhered to the view that non-notification of differences should be interpreted as acceptance of its regulations.[265] Although such an interpretation is correct in the case of registering disapproval with an Annex under Article 90 of the Convention, where lack of response from States may be taken to mean tacit acceptance, there is no reason to think that the same reasoning applies to Article 38. The Commission rightly emphasized this point in commenting that the ". . . present practice of accepting non-notification of differences as evidence of compliance with an Annex was regarded as unsound. . . ."[266] The Commission followed this observation by evolving a procedure for the notification of difference which, at least with respect to Standards relating to facilities, required States to report

[260] First Assembly Resolution A1-31, ICAO Doc 7670, p. 25, and see also supra p. 95.

[261] ICAO Doc 7037-3, C/814-3(19/9/50), para. 34, p. 38, and ICAO Doc 7361-15 (Open), C/858-15(23/4/53), Appendix "A," para. 4(iii).

[262] Tenth Assembly Resolution A10-24, ICAO A10-WP/148, P/15(16/7/56), preamble, para. 2, and clause (3).

[263] First Assembly Resolution A1-30, and Seventh Assembly Resolution A7-9, ICAO Doc 7670, pp. 24 and 208.

[264] ICAO Doc 7464-8, C/871-8(24/3/54), para. 38, p. 103.

[265] ICAO Doc 7037-3, C/814-3(19/9/50), para. 34, p. 38.

[266] Ibid.

compliance or non-compliance. "The Commission's view was that in respect of such Standards a State's obligation under Article 38 was merely to notify whether it intended to comply or not to comply. . . ."[267]

Proposals for amendment of Annexes are accepted by the Commission only after full agreement is secured,[268] and involves extensive consultation with contracting States.[269]

Acceptance of Standards and Recommended Practices does not necessarily imply their consequent implementation. States may wholeheartedly agree with the principles embodied in an Annex, yet find themselves unable to comply with them.[270] Sometimes States lack the knowledge of how to implement an Annex and to assess its economic and technical aspects. The following paragraph illustrates the case:

> It is not always a simple matter for States with small administrations, where one person often carries responsibilities in several technical fields, to determine precisely what the various Annexes and Standards and Procedures involve in terms of the administration, provision and cost of technical personnel equipment and facilities. Perhaps more important, is the difficulty experienced in such States in assessing the trend of these requirements to avoid expenditures on facilities that may not have a clearly defined and adequate period of utilization. Uncertainty on any of these points causes a delay in implementation and is often a reason for failing to ask for assistance.[271]

Difficulties which hamper States' implementation of Standards and Recommended Practices are the same as those that are detrimental to the implementation of Regional Plans.[272] The Organization's work does not stop with the promulgation of regulatory material, but is followed by a phase of assistance in implementation. The Assembly formulated a policy of priority in assistance, resolving:

> That primary emphasis be placed upon assisting States in the application of Standards, Recommended Practices and Procedures in the fields of Aerodromes and Ground Aids, Communications, Meteorology, Air Traffic Services, Aeronautical Information Services and Search and Rescue, including the Personnel Licensing and Training aspects of these fields.[273]

Assistance to States for the implementation of Standards and Recommended Practices comes mainly from the Air Navigation Bureau of the Secretariat and the Regional Offices. The policy for assistance was broadly outlined in an Assembly Resolution.[274] The Convention also provides for economic and technical assistance to be granted by the Organization upon the request of a State.[275]

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[267] ICAO Doc 7464-8, C/871-8(24/3/54), para. 38, p. 103. See also Tenth Assembly Resolutions A10-27 and A10-29, ICAO A10-WP/148, P/15(16/7/56), pp. 21 and 23.

[268] ICAO AN-WP/MIN, V-5(11/10/50), para. 6, p. 40.

[269] ICAO AN-WP/MIN, XVI-7(6-7-54), para. 6, p. 38.

[270] ICAO Doc 7564, A9-P/2(27/4/55), p. 29.

[271] ICAO A10-WP/20, TE/6(20/3/56), para. 2.1.2, p. 3.

[272] Supra p. 86.

[273] Seventh Assembly Resolution A7-10, clause (2), ICAO Doc 7670, p. 209.

[274] Tenth Assembly Resolution A10-27, clause (1), ICAO A10-WP/148, P/15 (16/7/56), p. 21.

[275] Chicago Convention, Articles 70, 71 and 74.

The development of Annexes has been discussed in the chapter dealing with technical meetings.[276] A few additional remarks, however, will serve to further clarify this matter.

An Annex is a product of careful and prolonged efforts on the part of several of the deliberative bodies of the Organization.[277] It requires constant coordination between Divisions, where Annexes normally originate, the Commission, contracting States, the Secretariat, and finally the Council, the adopting agency of the ICAO.

The Annexes, developed and adopted through a process of meticulous and lengthy deliberations and examinations, frequently imposing costly economic and administrative burdens on contracting States, cannot be changed and revised often, lest its implementation never be effected. On the other hand, progress in aviation and air navigation cannot be conditioned by the state of the technical regulatory material adopted. The reverse is the case, for it is legislation which follows normally changing conditions. This situation breeds two tendencies which are seemingly in conflict, the need for stability, and the inevitable changes and technical progress in international aviation.[278]

Admittedly, this situation is something of a dilemma. Both tendencies have to be carefully weighed and the solution must be practical and attainable by contracting States.

The Seventh Assembly, stating that ". . . there is a need to maintain a correct balance between the stability of International Standards, Recommended Practices and Procedures and keeping their provisions up to date;"[279] resolved:

> (1) That, pursuant to Recommendation A4-Rec.4 of the Fourth Session of the Assembly, amendments to International Standards, Recommended Practices and Procedures be limited to those significant to the safety, regularity, or efficiency or international air navigation and that editorial amendments be kept to the essential minimum;
>
> (2) That, with respect to amendments to International Standards, Recommended Practices and Procedures of a regulatory nature, the Council establish a program for the application of such amendments, so that the relevant national aeronautical regulations of Contracting States will not require to be amended more frequently than at intervals of one year, and that departures from this policy be made only in exceptional circumstances.[280]

Inclusion of material in an Annex is governed, as the above Resolution states with regard to amendments, by considerations of safety, regularity or efficiency, but it should be noted that, although the criteria are clear, no material would be considered for inclusion in an Annex unless it is deemed mature.[281] Maturity of material can be a

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[276] Supra p. 50.
[277] ICAO Doc 7215-AN/858(1951), Introduction, p. 1.
[278] For complete discussion of this matter, see ICAO A10-WP/19, TE/5 (20/3/56).
[279] Seventh Assembly Resolution A7-8, ICAO Doc 7670, p. 203.
[280] Ibid.
[281] ICAO AN-WP/MIN, VII-5(11/6/51), para. 5, p. 24.

question of timing, economic practicability, political considerations, or good prospects of compliance. Often, material considered not yet mature enough for inclusion in Annexes would be included in secondary technical regulations such as Procedures for Air Navigation Services or Supplementary Procedures.[282]

Annexes, when developed on the Division level, constitute a compromise between different national views and economic capacities. Thus Annexes establish minimum requirements, often below the requirements laid down by national regulations of some States, but this is the price to be paid by the more developed countries for the sake of uniformity of air navigation. Progress in international air navigation implies that the less developed countries be given an opportunity to approach the level of the more advanced countries, so as to guarantee some degree of uniformity.

So far, fourteen technical Annexes have been adopted, covering all important aspects of air navigation. These are:

1. Personnel Licensing
2. Air Traffic Services
3. Meteorology
4. Aeronautical Charts
5. Dimensional Units
6. Operation of Aircraft
7. Aircraft Nationality and Registration
8. Airworthiness
9. Aircraft Accident Investigation
10. Telecommunication
11. Rules of the Air
12. Search and Rescue
13. Aerodromes
14. Aeronautical Information.

These Annexes constitute a system by which international air navigation is governed and regulated, with the result that civil aviation is attaining levels of safety, regularity and efficiency not known hitherto. Although, at present, separate Annexes exist for different fields of air navigation, the trend is ultimately to combine all Annexes into an integrated system of regulations[283] contributing to further uniformity and progress.

The efforts of the Organization in technical legislation would not have been as successful had they not won the complete cooperation of contracting States. The following passage makes this evident:

> Experience has shown that contracting States take the obligations imposed by Article 37 of the Convention very seriously and accordingly view compliance with the international Standards that stem from Article 37 as a basic national policy. Although Article 38 of the Convention makes provision for any State which finds it imprac-

[282] ICAO Doc 7689(May 1956), Part IV, Section 2, p. 20.
[283] ICAO AN-WP/MIN, IX-9(25/2/52), para. 13, p. 41.

> ticable to comply in all respects with an international standard to give notification to the organization of the differences between its own practice and that established by the international standard, contracting States view with disfavor the creation of any situation which would make it impracticable to comply with a standard. This attitude is entirely in keeping with the spirit of the Convention.[284]

B. *Procedures for Air Navigation Services (PANS)*

Procedures for Air Navigation Services (PANS) are worldwide regulatory provisions, supplementing Standards and Recommended Practices and second to them in importance and status.

The Convention does not specifically provide for any technical legislation other than Annexes. Hence procedures for the promulgation of PANS had to be developed independently, and to some extent the methods for the promulgation and approval of PANS are modelled after those utilized with respect to Annexes.[285]

The difference between Standards and Recommended Practices and PANS is clarified by the following passage:

> Procedures for Air Navigation Services (PANS) are approved by the Council for worldwide application. They comprise, for the most part, operating procedures regarded as not yet having attained a sufficient degree of maturity for adoption as International Standards and Recommended Practices, as well as material of a more permanent character which is considered too detailed for incorporation in an annex, or is susceptible to frequent amendment, for which the processes of the Convention would be too cumbersome.[286]

Since PANS are secondary to Standards and Recommended Practices, they must conform with the latter. Furthermore, PANS are promulgated with the intention of eventually incorporating them in Annexes.[287]

The processing of PANS is similar to the processing of Standards and Recommended Practices, and the same bodies engaged in the formulation of the latter are engaged in the formulation of PANS. PANS normally originate in technical meetings, are reviewed by the Commission, and, accompanied by its recommendations, are submitted to the Council for approval.

Although States are under no statutory obligation to report differences and departures from PANS, the Organization has extended this practice, when such differences affect the safety, regularity and efficiency of air navigation, to PANS.[288] This is done in order to facilitate assistance in implementation and attain maximum uniformity.

PANS obligate States to the extent stated in Article 28 of the Convention. Their importance should not be minimized, since they constitute a definite step towards uniformity, enabling States to make

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[284] ICAO A10-WP/19, TE/5(20/3/56), para. 4, p. 2.
[285] ICAO Doc 7215-AN/858(1951), Introduction, p. 2.
[286] ICAO Doc 7689(May 1956), Part IV, Section 2, p. 20.
[287] Fourth Assembly Resolution A4-7, ICAO Doc 7670, p. 135.
[288] Ibid.

systematic progress towards improved air navigation facilities and procedures.

Approval of PANS and amendments thereto are functions of the Council, with one exception. The Commission has authority delegated to it by the Council to approve amendments of PANS consequential upon the adoption or approval of Standards and Recommended Practices and other sets of PANS.[289] This procedure lessens the burden of the Council, since PANS have to be revised and amended whenever a change occurs in regulations of higher or similar status.

C. *Supplementary Procedures (SUPPS)*

The third category of technical regulations consists of Regional Supplementary Procedures (SUPPS), which have a lower status than PANS and are limited to specific regions. SUPPS were rightly described as "regional additions to PANS"[290] since they vary from region to region, supplementing PANS and Annexes, in a manner designed to best cope with regional problems.

SUPPS are formulated by Regional Air Navigation Meetings.[291] It is not completely clear whether SUPPS are part of the Regional Plan or not. The Commission, however, has decided that there is a definite difference between SUPPS and Regional Plans, the latter being primarily concerned with facilities, as distinct from procedures.[292] The question has no practical significance since specific procedures govern the development and amendment of SUPPS. Nevertheless, it should be emphasized that the introduction of SUPPS constitutes a phase in regional planning, if not a formal part of the Regional Plan.

The Convention does not define SUPPS, and certainly says nothing about procedures applied on a regional basis. Nevertheless, this silence has no restrictive implications. The SUPPS have proven to be of great importance in gradually eliminating the procedural differences between regions, thus laying the ground for worldwide procedures. Often SUPPS are re-formulated as PANS for worldwide application.[293]

SUPPS must conform with PANS and Annexes and must consist of procedures not included in ICAO's other regulatory material which has been given worldwide application.[294]

SUPPS, like PANS and Annexes, are approved by the Council after review by the Commission. The Commission has no authority to approve SUPPS and amendments thereto.[295] It has, however, authority to approve "consequential amendments" to SUPPS whenever the approval of Standards and Recommended Practices and PANS requires

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[289] ICAO C-WP/2040, Appendix "A," para. 4.1, and ICAO Doc 7328-1, C/853-1 (24/9/52), para. 8, p. 3.

[290] ICAO Doc 6913-2(14/10/49), Annex "A," para. 3, p. 45.

[291] ICAO Doc 7214-C/831(11/11/52), Part II, paragraphs 1 and 3, p. 11, and ICAO C-WP/673(7/6/50), Appendix "A," p. 7.

[292] ICAO AN-WP/MIN, XIX-2(20/5/55), para. 20, p. 8.

[293] ICAO C-WP/673(7/6/50), Appendix "A," p. 7.

[294] ICAO Doc 7214-C/831/1(11/11/52), Part II, para. 3.1, p. 11, and ICAO AN-WP/MIN, XI-16(2/11/52), para. 4, p. 71.

[295] ICAO C-WP/2040, Appendix "B," para. 1.6.

revisions in SUPPS.[296] The Commission's authority to effect consequential amendments, does not imply that it may add new substance to SUPPS, but merely that it may bring them into line with regulations of superior status.[297]

The procedure for amendment of SUPPS[298] aims at simplifying and facilitating such amendment without prolonged deliberations, whenever possible. Proposed amendments are submitted by contracting States to the Regional Offices, together with the facts which have led the States to conclude that amendment is necessary. The Secretary General circulates the proposal to all States considered affected by it, except when he considers the proposed amendment to be in conflict with established ICAO policy or to require the special attention of the Commission. In the latter case, it is the Commission which decides what action should be taken on the proposal. If no States raise objections to the proposal as circulated, and if no Commissioner desires formal discussion, the proposal is submitted to the President of the Council, who is authorized to approve the amendment on behalf of the Council. If States do raise objections, the proposal is referred to the Commission, which, after study, submits it with appropriate recommendations to the Council.

Consequential amendments are drafted by the Secretary General, circulated to the Commission members, and automatically approved by the Commission. If, however, a Commissioner raises an objection or requests formal discussion, the Commission considers the proposal and approves it only after deciding that the amendment is necessary.[299]

The above procedure allows for great flexibility and constant adjustment of SUPPS, relieving the Council of an appreciable burden. As in the cases of Annexes, PANS and Regional Plans, it is the Regional Offices which check implementation of SUPPS and assist in the attainment of full compliance. It should be noted that the practice of notification of differences applies also to SUPPS, with the Regional Offices acting as monitors.[300]

Conclusions

It is difficult to assess the work of the Air Navigation Commission without due regard to the activities of the ICAO as a whole. The Commission functions as an integral part of a larger machinery and its work constitutes only a segment of a wider range of activities. Nevertheless, the Commission's record is impressive.

With the accumulation of experience, the Commission has steadily expanded and consolidated its authority, and developed effective methods for the facilitation of safe and efficient civil aviation services. Within the framework of the Organization, the Commission has

[296] ICAO C-WP/2040, Appendix "A," para. 3.6, and ICAO Doc 7328-1, C/853-1 (24/9/52), para. 8, p. 3.
[297] ICAO AN-WP/MIN, XX-23 (24/11/55), p. 119.
[298] ICAO A.N.C. Procedural Documents, p. V-1.
[299] Ibid.
[300] ICAO Doc 7464-8, C/871-8 (24/3/54), para. 5(c), p. 96.

assumed an increasingly important role coupled with the undertaking of greater responsibilities. Consequently, the Council has come to rely heavily upon the advice of the Commission, with the latter, as a result, widening its autonomy.

The success achieved by the ICAO in the field of air navigation is inconceivable without the hard work and painstaking efforts of the Commission to ensure the finding of practicable solutions to innumerable problems within its field of operation. The practice of the Commission to seek, whenever necessary, the advice and views of contracting States, has successfully paved the way to international agreement on basic questions of air navigation. The same practice has also served to make the Commission an instrument by which international collaboration is facilitated.

The task of the Commission has not always been easy. Political obstacles and economic difficulties have often deterred the Commission's efforts and desire to secure the best solutions to technical problems. States' policies have not always been in line with the essential interests of air navigation, making the task of the Commission rather difficult. The complexities of the international community often require the Commission to steer a course which has not always been purely technical in character. Compromise, however, is an integral part of international cooperation.

The increasing effectiveness of the Commission's work gradually brought about a change which has led to the conversion of some of its powers. Action-taking functions were added to the Commission's primary duty of advising the Organization, relieving the Council from discussing problems already explored and decided upon by the Commission. Since deliberations in the Council are basically an exchange of views between national representatives, the practice of the Commission to consult contracting States prior to arriving at a decision upon important matters made discussion of technical subjects in the Council less necessary.

The delegation of wider authority to the Commission, enabling it, in some cases, to take action and not merely to recommend it, proved to be profitable. Unnecessary delays were thus avoided, resulting in a greater measure of efficiency and flexibility in the development of air navigation.

The continuous improvements in the methods of operation of the Commission have been of substantial proportions. Yet there is still room for further improvement. Most of the work of the Commission is conducted by oral deliberations, examination of reports of technical meetings, secretarial studies, and conclusions of panels of experts. The Commission draws most of its information regarding the status of air navigation in contracting States, indirectly and from intermediary sources. Intercourse with States is maintained by correspondence or by liaison with representatives to the Organization. The situation in this respect suggests that Commissioners would do well to familiarize them-

selves personally with specific problems that different States are encountering in the field of air navigation, by visiting those States and studying the problems on the spot. Such a course would undoubtedly impose further strain on the tight work schedule of the Commission, but, on the other hand, it would facilitate the finding of solutions and promote understanding and good relations.

The changes in the membership of the Commission caused by the rotation of Commissioners has its obvious advantages and disadvantages. Commissioners returning home after the expiration of their term with the Commission, enrich with their experience civil aviation administrations in their respective States and promote cooperation with and understanding of the ICAO. On the other hand, changes in membership too frequently effected might bring about a state of affairs in which Commissioners would not stay long enough to gain sufficient experience and contribute fully to the work of the Commission. Such changes might also affect the functioning of the Commission as a highly integrated group. Hence it would seem desirable to make terms of membership long enough, in order to secure the necessary stability and prevent a state of flux in the Commission's membership.

The status of Commissioners is another point of extreme importance. Clarification of this matter is essential to the prestige of the Commission. Undoubtedly, the making of Commissioners international officers paid by the Organization would fortify the position of the Commission as an impartial and unbiased body, and would lend more weight to its decisions.

A further matter requiring urgent action is the filling of the remaining vacancies on the Commission. The failure to secure the necessary nominations in order to appoint the full number of Commissioners required by the Convention, raises a fundamental legal question concerning the status and establishment of the Commission. It is suggested that if no further nominations are advanced by contracting States not represented on the Commission, an effort be made to secure further nominations from States already represented. Appointment of such nominees could be made on a provisional basis and with the understanding that their term of membership would expire shortly after appointment of nominees whose States are not yet represented.

In conclusion, the observation should be made that the Commission has demonstrated a remarkable spirit of cooperation and understanding between its members, serving as an excellent example of what nations can achieve and what progress mankind can make when guided by a sense of mutual respect and sincere collaboration.

BIBLIOGRAPHY

CONVENTIONS

Convention on International Civil Aviation. Chicago, December 7, 1944.

Interim Agreement on International Civil Aviation. Chicago, December 7, 1944.

ICAO AND PICAO DOCUMENTATION

Air Navigation Commission:

—*A.N.C. Procedural Documents.* Montreal, 1956.

—Minutes and Working Papers, 1st to 22nd Sessions, 1949-1956.

Air Navigation Committee:

—Minutes and Working Papers, 1st to 5th Sessions, 1945-1946 (PICAO), 1st to 5th Sessions, 1947-1949 (ICAO).

Assembly:

—Documents and Working Papers of the Interim Assembly (PICAO), 1946.

—Documents and Working Papers of the ICAO Assembly, 1st to 10th Sessions, 1947-1956.

—*Resolutions and Recommendations of the Assembly, 1st to 9th Sessions, (1947-1955).* Doc 7670, Montreal, 1956.

Council:

—Minutes of the Interim Council (PICAO), 2nd to 8th Sessions, 1945-1947.

—Minutes, Proceedings and Working Papers of the Council, 1st to 28th Sessions, 1947-1956.

Development and Coordination of Technical Annexes to the Convention. Doc 7215-AN/858, Montreal, 1951. (obsolete)

Directives to ICAO Technical Meetings and Rules of Procedure for Their Conduct. Doc 7689, Montreal, 1956.

Memorandum on ICAO. Montreal, 1951.

Memorandum on ICAO. Montreal, 1953.

Reports of Regional Meetings, Montreal.

Rules of Procedure and Directives for Regional Air Navigation Meetings, 2nd edition. Doc 7214-C/831/1, Montreal, 1952.

Technical Annexes to the Convention on International Civil Aviation, Montreal.

OTHER PUBLICATIONS

Bernadet, Pierre M., *L'O.A.C.I. Service Public International.* Universite de Paris, 1953. (Thesis)

Department of State, *Blueprint for World Civil Aviation.* Publication 2348, Conference Series 70, Washington, 1945.

—*International Civil Aviation 1945-1948.* Report of the Representative of the United States of America to the International Civil Aviation Organ-

ization, publication 3131, International Organization and Conference Series IV, International Civil Aviation Organization 1. Washington, 1948.

—*International Civil Aviation 1948-1949.* Second Report of the Representative of the United States of America to the International Civil Aviation Organization, publication 3629, International Organization and Conference Series IV, International Civil Aviation Organization 4. Washington, 1949.

—*International Civil Aviation 1949-1950.* Third Report of the Representative of the United States of America to the International Civil Aviation Organization, publication 3915, International Organization and Conference Series IV, International Civil Aviation Organization 5. Washington, 1950.

—*Proceedings of the International Civil Aviation Conference, Chicago, Illinois, November 1-December 7, 1944.* 2 volumes, publication 2820, International Organization and Conference Series IV, International Civil Aviation Organization 1 and 3. Washington, 1948-49.

Eckart, Jean, *L'Organisation de l'Aviation Civile Internationale.* Universite de Strasbourg. (Thesis)

Pepin, Eugene, "ICAO and the Other Agencies Dealing with Air Regulation," *Journal of Air Law and Commerce,* (Chicago, 1952), XIX(2), 152-162.

Ros, Jeorge Enrique, *Organisation et Personnalite Juridique de l'O.A.C.I.* Universite de Paris, 1953. (Thesis)

Schenkman, Jacob, *International Civil Aviation Organization.* Geneve, 1955.

Werner, Edward, *ICAO After Six Years.* Montreal, 1952.

INTERNATIONAL REVIEW

I. INTERNATIONAL CIVIL AVIATION ORGANIZATION

DRAFT CONVENTION FOR THE UNIFICATION OF CERTAIN RULES RELATING TO INTERNATIONAL CARRIAGE BY AIR PERFOMED BY A PERSON OTHER THAN THE CONTRACTING CARRIER

In Vol. 24—August 1957—No. 4 of the Journal readers will find the text of the Draft Convention for the Unification of Certain Rules Relating to International Carriage by Air Performed by a Person Other than the Contracting Carrier which was developed by the 11th Session of the Legal Committee of ICAO in Tokyo, September 1957. Since that date, the Secretariat of ICAO has prepared a commentary thereon and the text is now reproduced hereunder:

SECRETARIAT COMMENTARY
on the
DRAFT CONVENTION FOR THE UNIFICATION OF CERTAIN RULES RELATING TO INTERNATIONAL CARRIAGE BY AIR PERFORMED BY A PERSON OTHER THAN THE CONTRACTING CARRIER

Introduction

1. The Legal Committee, in paragraph 24 of its Report on the draft Convention above mentioned, observed as follows:—

> "The Committee was unable, in the time available during the Eleventh Session, to prepare a detailed commentary on the draft convention. Accordingly, it has authorized the Secretariat to prepare such a commentary which, after approval by the Chairman of the Committee and the Rapporteur on the draft convention, will be submitted to the Council along with the text of the draft convention. The Committee recommends that, if the Council decides to circulate the draft convention to States and interested international organizations, the Secretariat commentary should accompany the text."

1.1 Accordingly, the present commentary has been prepared by the Secretariat and approved by the Chairman of the Committee and the Rapporteur on the draft Convention.[1] It is designed to be supplementary to the report of the Legal Committee and to provide explanations in regard to the articles of the draft Convention, including the reasons for the adoption of some of them.

Scope of the draft Convention

2. The draft Convention is intended to apply only to those cases where one person (the "contracting carrier") has made an agreement with the passenger or consignor, or with a person acting on behalf of the passenger or consignor, for international carriage by air within the meaning of the Warsaw Convention of 1929 or of that Convention as amended by the Hague Protocol of 1955, but the actual carriage is performed (in whole or in part) by another person (the "performing carrier"). The Committee had mainly in mind the following cases:—

—Charter of an aircraft with crew or interchange of an aircraft with crew.

—Cases of substituted carriage, e.g., where the passenger has made an agree-

[1] Professor A. Ambrosini, Chairman of the Legal Committee, and Mr. A. W. G. Kean, Rapporteur on the draft Convention, have approved the above commentary in their respective capacities, and have reserved their own positions and those of their Governments in respect to the commentary.

ment for carriage with one airline, but that airline has in fact arranged for that passenger to be actually carried by another airline (a practice often accompanied by the endorsement of the latter airline's name on the document of carriage).

—Cases involving an air freight forwarder. (See Appendix "A" hereto)

2.1 It should be noted that the draft Convention is not intended to apply to the following cases:—

(a) where the agreement for international carriage by air made by the passenger (or consignor) with a carrier is *replaced* by a new agreement made between the passenger (or consignor) and another person who actually performs the carriage; in such a case there is clearly a novation;

(b) where the performing carrier is a "successive carrier" within the meaning of Article 30 of the Warsaw Convention.

Purpose

3. The purpose of the draft Convention is to lay down the rules governing the rights and obligations of the performing carrier in relation to the passenger and his dependents, the consignor and the consignee. The legal position of the performing carrier in relation to the contracting carrier is left to be governed by the contract they may have made between themselves. The draft Convention thus provides solutions to certain problems which (as explained in paragraph 19 of the Committee's report) arise in connection with application of the Warsaw Convention (amended or unamended) in cases of the kind referred to in paragraph 2 above.

General principles

4. The general principles of the draft Convention are:—

(a) that the performing carrier shall be governed by the regime of the Warsaw Convention, subject to the special provision of Article V of the draft relating to cargo; and

(b) that, with respect to the carriage performed by the performing carrier, his acts and omissions will be attributed to the contracting carrier and *vice versa*.

Title

5. The Committee favored a separate convention rather than a protocol to the Warsaw Convention or an agreement supplemental thereto. The reason was to avoid creating an impression that the Warsaw Convention was being further amended soon after the Hague Protocol of September 1955. The title embodies this decision and reflects the main purpose of the draft, namely, to unify certain rules relating to international carriage by air performed by a person other than the contracting carrier.

ARTICLE I

6. The provisions of the draft Convention do not apply unless the passenger or consignor of goods has entered into an agreement of carriage which is governed either by the Warsaw Convention of 1929 or that Convention as amended by the Hague Protocol of 1955. Whether the unamended Warsaw Convention or its amended version will apply in a given case would depend upon the places of departure, destination or agreed stopping places relevant to "the agreement for carriage" which is referred to in Article II.

ARTICLE II

7. Article II provides that person who enters into the contract of carriage with the passenger or consignor is to be called the "contracting carrier." The draft as a whole, particularly in Articles IV, VII, VIII and IX, assumes that the contracting carrier is the person denoted by the expression "the carrier" in the Warsaw Convention, but the Committee did not make any specific provision to that effect.

ARTICLE III

8. This article embodies the principle that the rights and obligations of the performing carrier in respect of the carriage by him shall be those of "a carrier" under the Warsaw Convention (amended or unamended as the case may be). The consequence is that both the contracting carrier and the performing carrier will now be subject to the regime of the Convention.

8.1 The words "governed by the Convention" refer back to Articles I and II, with the consequence that the draft Convention will only apply when the agreement for carriage between the contracting carrier and the user is governed by the Warsaw Convention (amended or unamended) according to the places of departure and destination and, in some cases, the agreed stopping places; and the regime imported by that agreement is applied by this article to the performing carrier. This will be so even if the carriage performed by the performing carrier would not, apart from this provision, fall under that regime. The words "except as provided in this Convention" refer to the sole exception specified in the draft Convention, namely that in Article V concerning the extent of liability in the case of the carriage of cargo. The rule of Article III, as is expressly stated therein, applies to the performing carrier only in respect of the carriage with which he is concerned.

ARTICLE IV

9. The text of this Article is based in part on paragraph 2 of Article 25A of the Warsaw Convention (see Article XIV of the Hague Protocol) and, in part, on paragraph 1 of Article 13 of the Rome Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, 1952. It is designed to ensure that, if the claimant chooses to claim damages from both the contracting carrier and the performing carrier (whether in the same proceedings, or in suits filed separately, or even in different jurisdictions) under the Warsaw Convention and under the draft Convention, the total amount he can recover from both of them shall not exceed the maximum amount which he could have recovered if he had sued only one of them.

ARTICLE V

10. While Article III formulates the principle that the rights and obligations of the performing carrier shall, in respect of the carriage which he performs, be governed by the Warsaw Convention (amended or unamended), Article V introduces an exception to that principle, namely in regard to the extent of liability of the performing carrier in the case of the carriage of cargo.

10.1 Article V provides that "the extent of the liability" of the performing carrier shall be determined by reference to the agreement between him and the contracting carrier. This expression can mean either —

(a) the entire regime, including the principles governing liability as well as the amount of compensation which may be recovered, or

(b) only the limits of liability.[2]

From the verbatim records of the Eleventh Session of the Legal Committee it would appear that some delegates may have had only the limits in mind whereas other delegates had in mind the general regime and not only the limits. The following subparagraphs of the present paragraph 10 are based on the interpretation mentioned at (a) above; but a note relevant to the view at (b) above is also presented, namely in Appendix "B" hereto.

10.2 Article V was adopted by the Committee as an attempt to deal mainly, but not exclusively, with the position of the air freight forwarder. Attached to this commentary is Appendix "A" containing a statement filed by the United States of America, from which it will be clear that the main difficulty arises when the carriage performed by the performing carrier has such places of departure and destination, and in certain circumstances such agreed stopping places, as to fall under a different regime of liability from that applying to the whole of the carriage of the particular item of cargo. Consider the following examples: First, an air freight forwarder may contract to carry an item of cargo from San Francisco to London. He may consolidate several items into a single consignment which he may then consign by a U.S. domestic carrier as far as New York, where it will then be reconsigned by another carrier from New York to London. The carriage from San Francisco to New York is, by itself, clearly non-international carriage for the purpose of the Warsaw Convention (amended or unamended), and the question which arises is whether the performing carrier is to be subject to the rights and obligations of a non-international carrier under the domestic law of the United States or is to be subject to the rights and obligations of a performing carrier under the proposed Convention, i.e., to the regime of the Warsaw Convention. Second, similar problems may arise whenever part of the total carriage is subject to a different regime from that of the totality, for example, if the air freight forwarder contracts to carry between two countries which have ratified the Hague Protocol (that Protocol being assumed to be in force), and then employs a performing carrier to perform a part of the total journey, the part being subject only to the unamended Warsaw Convention. It seems that the solution adopted by the Committee was that, as an exception to the general rule laid down by Article III of the draft Convention, in the case of the carriage of cargo the performing carrier's rights and obligations should be subject to a regime determined by reference to the contract which he himself made with the contracting carrier rather than by reference to the contract entered into by the contracting carrier with the customer. In the first of the two examples given above this would mean that the performing carrier would be governed by the local regime of non-international carriage and not by the regime of the Warsaw Convention, while in the second example it would mean the regime of the unamended Warsaw Convention.

10.3 The underlying purpose of Article V, to judge from the discussion in the Committee, was to protect the performing carrier (in the case of cargo) from the situation which would arise because of the consolidation of several items of cargo in a single shipment by the air freight forwarder. The performing carrier would not necessarily know that individual items consolidated in the single shipment were consigned to a destination in another

[2] This problem of interpretation arises only in respect of the English and French texts where the expressions used are "the extent of the liability" and "étendue de la responsibilité." In the Spanish text the phrase is "el monto de la indemnización" (the amount of compensation), therefore the problem does not apply to the Spanish text. References to the problem, therefore, throughout this Commentary, including Appendix "B," have no relevance to the Spanish text.

contracting State, and might, therefore, have no reason to know that he was performing international carriage. His insurance arrangements might, therefore, apply only to non-international carriage. If, in accordance with the Convention, he received notices of claim from the original consignor, he would be unlikely to know of the original consignor (with whom he had had no dealings) or to recognize the reference numbers on the air waybill, or even to know that the particular goods were included in the consolidated consignment he received from the forwarder. The Convention provisions as to notice would, it was argued, have no value in relation to the performing carrier.

10.3.1 According to the above view, the liability of the performing carrier in respect of a claim made by the consignor will be determined by reference to an agreement to which the consignor was not a party, that is to say the agreement between the tow carriers.[3]

10.3.2 However, the Committee took into account the possibility that the performing carrier might, in his agreement with the contracting carrier, contract out of all liability with consequent likelihood of deteriment to the consignor whose right to recover compensation would be determined by reference to that agreement. Therefore, it made the application of the provisions of Article V of the draft Convention subject to Article IX of the draft and to Article 23 of the Warsaw Convention. The effect of such drafting appears to be as follows:

(a) if the agreement between the two carriers attracts the application of the Warsaw Convention (amended or unamended) then, obviously, Article 23 of the Warsaw Convention would apply even if no mention of that article were made in Article V of the draft Convention. However, the Committee apparently wished to make it clear beyond any doubt that Article 23 of the Warsaw Convention will, in such a case, apply not only as between the two carriers but also as between the performing carrier and the consignor;

(b) if the carriage performed by the performing carrier is domestic carriage or if, for other reasons, the Warsaw Convention will not apply to it, then, in accordance with Article IX of the draft Convention, "any provision purporting to exclude or diminish the liability" of the performing carrier shall be null and void. The "provision" referred to in said Article IX means apparently a contractual provision, and not, presumably, a provision of the domestic or other law applying to the agreement made between the two carriers. It is not clear whether it is intended that contracting out is permissible if, and to the extent that, it is permissible under the regime governing the contract between the two carriers.

10.4 Article V includes a provision that the liability of the servants and agents of the performing carrier shall also be determined by reference to the agreement between the performing carrier and the contracting carrier. This takes account of the provisions of the Hague Protocol relating to servants and agents of the carrier.

10.5 It will be observed that the reference is to be to the "agreement between that other person and the contracting carrier" and not to the "contract of carriage" between those persons. The reason for this is that the agreement to which reference is made may not be a contract of carriage but may be a charterparty, which will not, by operation of law, be governed by the Warsaw Convention, amended or unamended.

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[3] For a possible, different view, see para. 10.1 above and Appendix "B" hereto.

10.6 Under the draft Convention, in the case of the carriage of passengers the same regime which governs the contract of carriage made between the passenger and the contracting carrier is made applicable also to the performing carrier in all cases; but in the case of carriage of cargo —

(a) if the regime applicable to the agreement between the performing carrier and the contracting carrier is not the same regime[4] as is applicable to the contract between the contracting carrier and the consignor, then the liability of the performing carrier to the consignor will be governed by the first-mentioned regime;[5]

(b) the regime which governs the contract between the consignor and the contracting carrier will govern also the liability of the performing carrier to the consignor only if it happens to coincide with the regime which governs the agreement which the performing carrier made with the contracting carrier.

The air freight forwarder

10.7 If the above interpretation of Article V be correct, the position in a case involving an air freight forwarder would be as in paragraph 10.8 where A is a consignor of goods who, like several other consignors, has entrusted the goods to B, an air freight forwarder, for carriage which is international carriage by air, and B, whether by consolidating the shipment of A along with similar shipments of other clients, or without such consolidations, gives A's goods to an airline, C, for carriage. In the above case it will be noted that A is the consignor vis-à-vis B under an agreement for carriage governed by the Warsaw Convention, while B in his turn is a consigner vis-à-vis C.

10.8 The effect of Article V in the above-mentioned example would be that:

(a) if the carriage which C has undertaken to perform in his agreement with B is international carriage by air governed by the Warsaw Convention, then A, by virtue of the provisions of Articles III and V of the proposed Convention can hold C liable, in respect of the carriage of cargo by the latter, and obtain compensation for any loss, in accordance with the provisions of the Warsaw Convention, including the provisions concerning limits of liability; but

(b) if the carriage by C, for which he has entered into an agreement with B, is not international carriage by air within the meaning of the Warsaw Convention in its original form or as amended, then C's liability to A will depend upon the regime applicable apart from the Convention. If, however, the true effect of Article V is confined to the limitation of liability, C's position with regard to limitation of liability will be determined by reference to the agreement he made with B (subject to Article IX of the draft Convention and Article 23 of the Warsaw Convention), but all other matters (e.g., the exclusion of liability under Article 20 of the Convention; the duty to sign an air waybill) will be governed by the Convention.

Charters

10.9 It may be noted that where an air freight forwarder is not involved, the contract between B and C could be one of a charter not constituting an agreement for international carriage by air. The same result as at (b) above would arise, considering that Article 23 of the Warsaw Convention will not

[4] Either because the agreement between the two carriers is a charterparty, or relates to a purely domestic carriage, or is governed by the amended Warsaw Convention while the contract between the contracting carrier and the consignor is governed by the unamended Warsaw Convention, or *vice versa*.

[5] Unless (b) in paragraph 10.1 above be the correct interpretation.

affect the charter and B and C, therefore, can agree in regard to any limits which are permissible under the law, not being the law of the Warsaw Convention, which would govern such charter, although, as pointed out in paragraph 10.3.2, the question is not free from doubt.

NOTE:—

10.10 It is perhaps unnecessary to point out that the above commentary is that of the Secretariat made after the termination of the session of the Legal Committee at which the draft Convention was adopted, and is an attempt to interpret what is probably the collective view of the Committee, though, as will be evident from the minutes of the Tokyo meeting, the views expressed by individual members varied greatly on certain points.

ARTICLE VI

11. The Committee favored adoption of a principle which, differently correlated by the jurists on the Committee, familiar with different legal systems, with such concepts as "solidarité," "joint and several liability" and "representation," would establish in the proposed Convention the attribution to the performing carrier of the effects of acts and omissions of the contracting carrier, which object is embodied in Article VI, and the attribution to the contracting carrier of the effects of acts and omissions of the performing carrier, which object is embodied in Article VIII of the draft. It will be noted that the principle applies only insofar as the act or omission is in relation to the carriage performed by the performing carrier. Further, the word "also" is the first sentence of Article VI, as in the first paragraph of Article VIII, preserves the effects of the acts and omissions of the contracting carrier, his servants and agents to such carrier, and similarly the effects of acts and omissions of the performing carrier himself and his servants or agents to that carrier.

11.1 Article VI, however, provides four exceptions to the principle that the performing carrier will be liable for the acts and omissions of the contracting carrier, his servants and agents. The first of these exceptions is in respect of "limitation of liability under the Convention." The intention of the Committee specifically decided through the debates, was that the performing carrier should not lose the benefit of limitation of liability under the Convention solely by reason of —

(i) the wilful misconduct of the contracting carrier as specified in Article 25 of the Warsaw Convention or his conduct or that of his servants or agents as specified in the same article as revised in the Hague Protocol; and

(ii) non-compliance by the contracting carrier, his servants and agents, with the Warsaw provisions relating to documents of carriage.

11.2 While the third and fourth execptions, namely, waiver of rights or agreement to increase in the limits of liability, require no comment, it should be stated that the second enumerated exception, namely "special agreement under which the contracting carrier assumes obligations not imposed by the Convention," refers to such agreement, for example, as a promise to deliver goods within a time stipulated in the agreement between the contracting carrier and the consignor.

ARTICLE VII

12. The principle upon which the Committee proceeded was that the servants and agents of the performing carrier should, in a given case, be governed by the same rule as applied to their principal; and since Article III provides

that the rights and obligations of the performing carrier shall, in respect of the carriage which he performed, be those of "a carrier under the Convention," it seems that the last three words of Article VII, namely "the contracting carrier," should be "a carrier under the Convention." The same result would be achieved by retaining the words "the contracting carrier" if the draft convention contained a provision that the contracting carrier is always "a carrier under the Convention," but, as has been mentioned in paragraph 7 above, the Committee did not wish to include provision to that effect in the draft.

12.1 It follows that the opening phrase of Article VII, "subject to the provisions of Article V," is necessary since, as provided in Article V, the extent of liability of the servants and agents of the performing carrier, and that of the carrier himself, may, in the case of carriage of cargo, be different from those of "a carrier under the Convention."

ARTICLE VIII

13. The objects of this Article have been discussed in the commentary under Article VI.

ARTICLE IX

14. The provisions of this Article are based on those of Article 23 and Article 32 of the Warsaw Convention. See also comments in paragraph 10.3.2 above.

ARTICLE X

15. This Article pertains solely to the procedural question of the plaintiff having the option to institute an action for damages against either the contracting carrier or the performing carrier or against both together. Such actions must be in respect of the carriage performed by the performing carrier.

ARTICLE XI

16. Paragraph (1) of this Article mentions, in the English text, "the contracting carrier" in the context of the jurisdiction under Article 28, paragraph (1) of the Warsaw Convention; this is also the case in the Spanish text, but the French text mentions only "the carrier." It is assumed that the French text should be brought into line with the other two texts.

16.1 The effect of paragraph (2) of this Article is to make available to the plaintiff who wishes to proceed against the contracting carrier a forum additional to those specified in Article 28 of the Warsaw Convention. But this privilege is available only if he is also suing the performing carrier before the same court; and the action must relate only to the carriage performed by the performing carrier.

ARTICLE XII

17. This Article preserves the effects of Article 30 of the Warsaw Convention. The latter refers to "successive carriers." Paragraph (3) of Article 1 of the Warsaw Convention provides:

> "A carriage to be performed by several successive carriers is deemed, for the purposes of this Convention, to be one undivided carriage, if it has been regarded by the parties as a single operation, whether it has been agreed upon under the form of a single contract or a series of contracts. . . ."

If a "successive carrier" is not in fact a party to one of the "series of contracts" just mentioned, he, by virtue of Article 30 of the Warsaw Convention, is nevertheless "deemed to be" a party to the contract made by the contracting carrier with the passenger or consignor. It is evident that in the case where a "successive carrier" was not a party to a contract made with a passenger or consignor, "carriage is performed by a person other than the contracting carrier" within the meaning of Article III of the draft Convention. However, as declared in Article XII, a successive carrier is not governed by the draft Convention. He is to be distinguished from the persons mentioned in paragraph 2 above, namely a person who receives for carriage cargo from an air freight forwarder, or receives a passenger for "substituted carriage," or makes available his aircraft with crew under an agreement of charter made with the contracting carrier. Whether or not a person who, not being the contracting carrier, actually performs a part of the carriage agreed by the latter, is a successive carrier is to be determined upon the facts of the case concerned.

APPENDIX "A"

STATEMENT REGARDING AIR FREIGHT FORWARDERS

I. The following definition was before the Legal Committee at Tokyo:

> "A forwarder is a person which engages indirectly in transportation of property only and does not engage directly in the operation of aircraft and which, in the ordinary and usual course of his undertaking, (a) assembles and consolidates or provides for assembling and consolidating such property, or performs or provides for the performance of break-bulk and distributing operations with respect to such consolidated shipments, or both, (b) assumes responsibility for the transportation of such property from the point of receipt to point of destination, and (c) utilizes for the whole or any part of the transportation of said shipment, the services of a direct air carrier."

II. The Delegation of the United States of America filed a statement concerning the conduct of the air freight forwarding business in that country. Extracts from that statement are given below. The statement was made prior to adoption of the Tokyo draft convention, therefore, in reading these extracts against the background of the Tokyo draft convention, the expression "operating carrier" should be taken as referring to "the other person" or "performing carrier" and the air freight forwarder is, of course, "the contracting carrier."

> "In the United States a freight forwarder is a person who, although he does not own or operate aircraft, will nevertheless enter into a contract of carriage with a consignor. He will issue an air waybill *in his own name* to the consignor, and by doing so he becomes liable as a carrier if the goods are damaged or delayed. He is not a broker or an agent of either the operator or the consignor—he is making an agreement in his own name and he has the duties and responsibilities of a carrier.
>
> At the time the air waybill is issued by the forwarder the operating carrier is not specified in the air waybill, and usually is unknown. The selection of the operating carrier is made by the forwarder, and is dependent upon such factors as the most favorable rate and the fastest schedule.
>
> After issuing the air waybill the forwarder (usually at the close of the business day) will gather together the shipments of many consignors, and will consolidate into a single shipment all shipments which can be carried over the same route. For example, twenty different shipments from New York to Chicago, for which 20 air waybills have been issued to 20 different consignors, will be consolidated into a single package. The forwarder then names itself as both consignor and consignee of this package, and delivers it to an operating carrier. The operating carrier issues to the forwarder

an air waybill in which the forwarder is named as the consignor.[6] In this transaction the operating carrier has the duties, responsibilities and rights of a carrier, and the forwarder has the duties, responsibilities and rights of a consignor.

In the example given, therefore, there are actually 21 air waybills which have been issued. In 20 of them the forwarder is, to all intents and purposes, a carrier. In one of them—that is, the air waybill issued to the forwarder by the operating carrier—the forwarder is in fact and in law nothing but a shipper and usually also a consignee. The operating carrier may be completely unaware of the existence of the other 20 air waybills, and unaware that the shipment is in fact a consolidation of 20 shipments by 20 different consignors.

In the example given, let us assume further that the consolidated package is damaged by the operating carrier with the result that the value of 10 of the original shipments is completely destroyed. In this situation each of the 10 consignors will normally bring claim against the forwarder and will collect damages from the forwarder based on their separate air waybills issued to them by the forwarder. The forwarder, of course, will file a claim against the operating carrier and will collect damages upon the air waybill issued by the operating carrier to the forwarder. The recovery by the forwarder is based upon the amount of damage to the goods shipped by the forwarder (ownership is not relevant), and not upon the amount recovered by the consignors against the forwarder.

While the procedure described above is the one which is followed in almost all cases, it is not the only one which is possible. The 10 consignors whose goods were damaged could also bring their claims against the operating carrier. However, if this were done, the recovery against the operating carrier would not be on the air waybill issued by the forwarder to the consignor, but as an undisclosed principal upon the air waybill issued by the operating carrier to the forwarder.[7] In other words, the theory of the suit is that the forwarder, when the contract of carriage was made between the operating carrier and the forwarder, was acting as the agent for the 20 consignors.

The system described above has worked well in both surface and air transportation for many years. Although somewhat complex, it is a system which is practicable, and which has been used for the transportation of an enormous volume of goods in the air and on the surface. The continued financial and economic success of this system depends upon two things. As to the forwarder, it depends on his ability to obtain many small shipments and consolidate them into large ones which he can ship at a lower unit rate than the rate of the operating carrier which would apply to the individual shipments if shipped separately. The forwarder must pay his expenses and make his profit on this difference or "spread" between the rate applicable to large shipments and the higher unit rate applicable to small ones. On the part of the operating carrier, continued success of the system depends on his ability to handle the shipment as a single large shipment from a single shipper, and not as a collection of 20 shipments from 20 consignors. The carrier obviously could not continue to offer the lower unit rate for the large shipment if in fact he has to handle it in the same manner as 20 small shipments. It is the function of the forwarder to shield the carrier against this possibility. One of the functions of the forwarder is to answer to claims from 20 consignors, to handle the documentation of 20 consignors, and otherwise to spare the operating carrier of the expense and trouble of having to deal with 20 different consignors.

It is obvious that the present system would be altered very drastically by the proposed convention.

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[6] When this package is delivered in Chicago and forwarder receives it and "breaks bulk," i.e., the forwarder separates the consolidated shipment into its component parts. Some of these individual shipments may be addressed to consignees in Chicago, and are delivered by the forwarder to such consignee. Others may require onward transmission by air or surface transportation to various different destinations. In the course of this onward transmission the forwarder may again consolidate a number of individual shipments (including some not included in the original consolidated shipment transported from New York to Chicago) if it is expedient to do so.

[7] Up to the present time litigation involving this principle has been confined to surface transportation. There is no reason to believe, however, that the same principle will not be extended to transportation by air.

(a) The carrier, who under the present system has nothing to do with the consignors, would become in effect a party to the agreements between the consignors and the forwarder, without knowing the terms of those agreements, and, indeed, without being aware of their existence.

(b) In the event of suit against the carrier, the carrier would be liable to the consignor on the agreement between consignor and forwarder, and not, as at present in the United States, on the agreement between forwarder and carrier.

(c) The right to use the carrier on the consignor-forwarder agreement *may* greatly increase the number of claims and suits brought against the carriers. The additional expense of handling these separate small claims and suits could cause the entire system to become uneconomic and destroy it. In this connection it is worth noting that both the carriers and the forwarders are opposed to the application of the proposed convention, as now drafted to forwarders.

(d) It would usually be impossible for the forwarder to know, in advance of any claim, whether the convention, or the completely different system of domestic law, applied to a forwarder shipment. For example, assume a case in which a forwarder consolidates the goods of 20 consignors and ships them pursuant to a contract of carriage with an operating carrier, from San Francisco to New York, to domestic points within the United States; that at New York the forwarder "breaks bulk" and ships some of the individual packages to other domestic points which are their destination, and ships the remaining packages to various countries parties to the Warsaw Convention. In this situation the liability and responsibility of the operating carrier for part of the shipment would be governed by the Warsaw Convention, and the remainder by domestic law. Moreover, the operating carrier does not know whether all of any part of the shipment is governed by the Convention until the claim is presented. In addition, it is entirely possible that if certain provisions of the Convention are involved by one or more of the consignors (e.g., Articles 12 and 13), the operating carrier may be forced to the hard choice of defaulting either on his obligations under the Warsaw Convention or on his obligations to the forwarder on the contract of carriage between forwarder and operating carrier."

APPENDIX "B"

NOTE RELEVANT TO (b) IN PARAGRAPH 10.1 OF THE COMMENTARY

1. Before Article V was drafted in its present form, the Committee took the decisions described below.

1.1 First of all, the Committee decided, at its eleventh meeting, by a vote of 10 to 9, that, in the case of the carriage of cargo, the liability of the performing carrier to the consignor is established by the places of departure, destination and agreed stopping places set forth in the contract of carriage between the consignor and the contracting carrier.

1.2 The Committee then decided, by a vote of 16 to 0, with two abstentions, that, in the case of the carriage of cargo, there should be a special provision in the draft convention to ensure that the liability of the performing carrier to the consignor does not exceed the liability of the performing carrier to the contracting carrier; and, by a vote of 11 to 3 that such special provision should not be restricted to the case where the contracting carrier consolidated a number of shipments which he consigned to the performing carrier as a single shipment.

2. Consequent upon the above decisions, the Drafting Committee presented the following draft of Article V:

> "In the case of carriage of cargo, the liability of the other person, his servants and agents, shall not exceed the maximum amount of liability under the agreement for carriage made by him."

3. When that draft of Article V was discussed in the full Committee, a

proposal (referred to below as "the new proposal") was made that it be redrafted to read:

> "In the case of carriage of cargo, the extent of the liability of the other person shall be determined by the agreement between that other person and the carrier."

3.1 The new proposal differed from the Drafting Committee's text in several respects. In particular, the Drafting Committee's text spoke of "the maximum amount of liability," while the new proposal used the expression "the extent of the liability of the other person." Again, the Drafting Committee's text specified "shall not exceed the maximum amount of liability under the agreement," while the new proposal said "shall be determined by the agreement."

3.2 Subsequently the last-mentioned expression was changed, in order to provide for applicability to cases where a claim in tort was made, to "shall be determined by reference to the agreement."

4. The text as finally adopted at the sixteenth meeting of the Committee included the expression "the extent of the liability of the other person." On the face of it, this expression can appear to refer to the *quantum* i.e. the monetary amount and not to the whole regime of liability. The expression is not unqualified, for example, it does not read "the liability of the other person"; on the contrary it contains words of limitation, namely "the *extent* of" the liability of the other person. An attempt to delete those words was made at the eighteenth meeting without success. Secondly, the expression "the extent of the liability" is intended, as mentioned in paragraph 3.2 above, to refer not only to claims made by the consignor on the basis of contract but also claims made on the basis of tort. In a claim in tort it is not possible to speak of a regime of liability based on an *agreement* (between the contracting and performing carriers); the only feature common to a claim on the basis of contract and a claim in tort can be the extent or amount of the compensation. In this view the expression "the extent of liability," since it is to govern claims in contract as well as in tort, will mean the amount of compensation and cannot mean the principle of liability. Thirdly, this interpretation is consistent with the decisions taken by the Legal Committee (see paras. 1.1 and 1.2 above). It may be added that at a subsequent meeting, namely the seventeenth, when the Committee was discussing a proposal concerning air freight forwarders, the Swedish Delegate stated that "the only way of solving this problem was to provide in Article III that the obligations and liability of the performing carrier were established by the agreement which he had made with the contracting carrier. The Committee should therefore reverse the decision which it had already taken in this regard." The Delegate of the United States seconded the Swedish proposal. The Committee rejected the proposal regarding air freight forwarders and was not called upon to vote on the Swedish proposal.

5. On the other hand, it seems also possible to interpret the words "extent of liability" in Article V of the draft Convention as meaning not only the quantum of compensation but the whole regime of liability, as pointed out in paragraph 10.1 of the Commentary.

THE LEGAL STATUS OF AIRCRAFT AND CRIMES COMMITTED ON BOARD OF AIRCRAFT

The ICAO Legal Subcommittee dealing with this subject met in Montreal in September 1958. At the time of going to print, the report of the meeting is not as yet available but it is hoped to publish it in a later issue.

As a result of discussion at the meeting, the following Draft Convention was developed:

DRAFT CONVENTION[8]

ARTICLE I

1. This Convention shall apply in respect of the offenses and other acts hereinafter mentioned when committed or done by a person on board any civil aircraft registered in a contracting State, while it is engaged in international air navigation, from the moment it first moves under its own power for the purpose of taking off until the moment it comes to rest at the end of the flight. The Convention shall also apply when such aircraft is on the high seas or any other area outside the territory of any State.

2. This Convention shall not apply to State aircraft. Aircraft used in military, customs and police services shall be deemed to be State aircraft.

ARTICLE II

The offenses and acts referred to in Article I are such offenses as are punishable under the laws of any contracting State and such acts as are specified in Article V.

ARTICLE III

1. Independently of any other applicable jurisdiction, the State of registration of the aircraft is competent to exercise jurisdiction in accordance with its own law over offenses committed on board the aircraft.

2. The criminal jurisdiction of a State in whose territorial airspace the offense was committed, if such State is not the State of registration of the aircraft or the State where the aircraft lands, shall not be exercised in connection with any offense committed on an aircraft in flight, except in the following cases:

(a) if the offense has effect on the territory of such State;
(b) if the offense has been committed by or against a national of such State;
(c) if the offense is against the national security of such State;
(d) if the offense consists of a breach of any rules and regulations relating to the flight and maneuver of aircraft in force in such State;
(e) if the exercise of jurisdiction is necessary to ensure the observance of any obligation of such State under an international agreement.

3. In cases other than those referred to in paragraph 2, the State having custody of the suspected offender, if it has no jurisdiction over the offense or does not wish to exercise such jurisdiction, will take all practicable measures, in accordance with the terms of this Convention, to enable jurisdiction to be exercised by the State of registration of the aircraft, or any other State, if competent and desiring to exercise jurisdiction over the offense.

4. Nothing in this Article shall be deemed to create a right to request extradition of any person.

ARTICLE IV

Where a final judgment has been rendered by the authorities of one contracting State in respect of a person who has been charged with an offense, such person may not be tried again for the same offense by the authorities

[8] Approved by the Sub-committee on 20 September 1958.

of another contracting State unless he is a national of such State and its laws permit such further trial.

ARTICLE V

The individual responsible for the operation and safety of the aircraft (hereinafter called the aircraft commander) shall have the right to impose upon any person who he has reasonable grounds to believe has committed an offense on board the aircraft, or who he has reasonable grounds to believe will jeopardize by his actions the safety of the passengers, crew, cargo or aircraft, measures of restraint when these seem necessary to protect the safety of the passengers, crew, cargo or aircraft, or to enable the aircraft commander to deliver the person so restrained to competent authorities.

ARTICLE VI

The aircraft commander shall have the right to request or authorize the assistance of other crew members and of passengers to restrain any person whom under Article V he has the right to restrain. Any crew member may also impose such restraint without authorization when immediate restraint reasonably appears to be necessary to protect the safety of the passengers, crew, cargo or aricraft.

ARTICLE VII

1. The aircraft commander shall have the right to deliver to competent authorities of any contracting State in the territory of which the aircraft lands any person who he has reasonable grounds to believe has committed an offense on board the aircraft.

2. The aircraft commander shall have the right to detain the suspected offender until the aircraft lands in a place in a contracting State where the authorities agree to detain him.

3. The aircraft commander shall also have the right to deliver any person to the competent authorities of any State in the territory of which the aircraft lands if the safety of the passengers, crew, cargo or aircraft requires that such person be removed from the aircraft.

ARTICLE VIII

1. The aircraft commander shall retain for delivery to appropriate authorities anything which he considers to be evidence in connection with any apparent offense. The aircraft commander may collect information from any person on board the aircraft in regard to the offense.

2. The aircraft commander shall transmit to the authorities to whom any suspected offender is delivered anything which he has retained as evidence and any information which he has obtained in accordance with paragraph 1.

ARTICLE IX

1. The aircraft commander shall report to the appropriate authorities of the State of registration of the aircraft the fact that an apparent offense has occurred on board, any restraint of any person, and any other action taken by him pursuant to this Convention, in such manner as the State of registration may require.

2. The aircraft commander shall, as soon as practicable, notify the appropriate authorities of any contracting State in which the aircraft lands of the fact that an apparent offense involving violence or an act endangering

the safety of the passengers, crew, cargo or aircraft has occurred and that the suspected offender is on board.

ARTICLE X

Neither the aircraft commander, other member of the crew, a passenger, the owner nor the operator of the aircraft, shall be liable in any proceedings, civil or criminal, brought in respect either of any reasonable restraint imposed under the circumstances stated in Articles V and VI of this Convention or of other action authorized by Articles VII, VIII and IX.

ARTICLE XI

1. Any contracting State shall take custody of any person whom the aircraft commander delivers pursuant to Article VII upon being satisfied that the circumstances warrant taking such person into custody and the contracting State then assumes such obligation pursuant to its regulations and laws. If the circumstances involve an offense the State having custody shall promptly notify any State in whose territorial airspace the offense was committed and the State of registration of the aircraft of the nature of the apparent offense and the fact that the suspected offender is in custody.

2. The State having custody, if it has no jurisdiction over the offense or does not wish to exercise such jurisdiction, shall make a preliminary investigation of the apparent offense and shall report its findings and such statements or other evidence as it may obtain to any State in whose territorial airspace the offense was committed and the State of registration of the aircraft.

3. If the State having custody has no jurisdiction over the offense or does not wish to exercise such jurisdiction, it shall not retain custody of the suspected offender for more than (blank period) unless some other State having jurisdiction has notified the State having custody of its intention to seek extradition under an arrangement then in existence.

ARTICLE XII

In taking any measures for investigation or arrest or otherwise exercising jurisdiction in connection with any offense committed on board an aircraft the contracting States shall pay due regard to the safety and other interests of air navigation and shall so act as to avoid unnecessary delay of the aircraft, passengers, crew or cargo.

ARTICLE. XIII

Nothing in this Convention shall be deemed to affect any immunity, privilege or requirements for special treatment accorded by international law or by any international agreement or arrangement.

II. INTERNATIONAL AIR TRANSPORT ASSOCIATION

The Annual General Meeting of IATA was held in New Delhi, India, between October 27th and 31st, 1958. The Legal Committee report is reproduced in full, with excerpts from the Traffic Advisory Committee's report and a summary of the Technical Committee's report:

REPORT OF THE LEGAL COMMITTEE

In the absence of the Chairman of the Legal Committee, Mr. George A. Spater, TWA, the Report of the Legal Committee was read to the meeting

by Mr. Maurice Lemoine, Secretary General of Air France, and Member of the Legal Committee of IATA. The text of the report reads as follows:

Introduction

Since the last AGM the Legal Committee met in Bermuda from 28th April to 30th April, 1958. The Committee plans to have another meeting in New Delhi on 21st October of this year.

For the purpose of this report, the matters considered by the Legal Committee have been summarized under two general headings: First, those items which may involve action by individual Members of IATA, or by the Executive Committee, or by the AGM. Second, those items which, while perhaps of general interest, are at this stage primarily problems of legal drafting or action by the Traffic Conferences.

Items Which May Involve Action by Individual IATA Members, The Executive Committee or the AGM

The following major subjects are those on which action by the Members of IATA, the Executive Committee, or the AGM may be desirable or appropriate:

(a) The more extensive adoption of the Warsaw Convention and ratification of the Hague Protocol.
(b) The enactment of local legislation extending the rules of the Warsaw Convention to traffic which is not governed by the Convention.
(c) The ratification of the Rome Convention of 1952 dealing with damage caused by foreign aircraft to third parties on the surface.
(d) The universal use of a uniform form of passenger ticket.

In each of the foregoing subjects, practical steps can be taken which should redound to the benefit of the international air transport industry.

More Extensive Adoption of the Warsaw Convention and Ratification of the Hague Protocol

While the Warsaw Convention is one of the most widely accepted international conventions in the field of private law, there are still many countries which have not become parties.

In Central and South America the following States are not parties to the Convention: Bolivia, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Nicaragua, Paraguay, Peru and Uruguay.

In the Middle and Far East the following countries have not signed: Afghanistan, China, Iran, Iraq, Saudi Arabia, Thailand and Turkey.

As can be seen, uniformity in the rules governing the liability of international carriers is far from complete.

Certain States may have refrained from adhering to the Convention during the period the currently proposed revisions to the Convention were being discussed. However, these revisions were completed at the Hague in 1955. We think that substantial benefit would accrue to the air transport industry through the adherence of additional parties to the Convention. The time is now appropriate for bringing this matter to the attention of those States which are not yet parties so that new adherents can simultaneously adopt both the Warsaw Convention and the Hague Protocol.

The Hague Protocol, the pending amendment to the Warsaw Convention, will become effective only when 30 countries, parties to the Warsaw Convention, have ratified it. Up to the present time this document has been signed by 23 States and ratified by only 9: Egypt, El Salvador, Laos, Poland, Hungary, Luxembourg, Mexico, Czechoslovakia and U.S.S.R. Here again is an

area in which IATA Members can play an important role in giving assistance or encouragement to their respective governments so that the Hague Protocol can be made effective.

Adoption of Local Legislation to Extend the Rules of Warsaw Convention to Traffic Not Governed by the Convention

In the past, a number of States, a notable example being the United Kingdom, have adopted domestic legislation making the Warsaw Convention rules apply to domestic transportation and to other transportation not subject to the Warsaw Convention. This, of course, provides still further uniformity of practice and of carrier liability and is desirable on both counts.

Several methods have been used in the form of local legislation adopted by the various States that have taken this step. The Legal Committee, after a review of the situation, has concluded that the manner in which the extension of the Warsaw rules has been made in the United Kingdom through the "Carriage by Air (non-international) (U.K.) Order 1952" is preferable to the other methods which have been applied. It is therefore suggested that Members of IATA whose governments are presently considering ratification of the Hague Protocol and the extension of its terms to non-Convention traffic might wish to bring this point of view to the attention of their governments.

Rome Convention of 1952

The Rome Convention deals with damage caused by foreign aircraft to third parties on the surface. The Convention is now in force, having been signed by 19 States and ratified by Canada, Egypt, Luxembourg, Spain and Pakistan.

Although in force, the Convention is of limited usefulness because of the very small number of ratifications. It has been the view of IATA that this Convention is a desirable one and Members may wish to take whatever steps are necessary with their governments to assure the addition of further ratifications.

Uniformity of Ticket Form

It will be recalled that new Conditions of Contract on the passenger ticket, the result of consultations with the CAB, were adopted by the Traffic Conferences last year. The enabling resolutions required IATA Members to print the new Conditions on their tickets by November 1, 1957, or as soon thereafter as the ticket stocks had been used up. Many companies have done so. There are, however, several which still make use of old tickets with the outdated conditions. While we appreciate the fact that reprinting of tickets is an expensive item, nevertheless we call the attention of Members to the unsatisfactory situation which arises from the continued divergence of conditions printed on tickets used in interline carriage. It is desirable that all Members use the new language on their passenger tickets with a minimum of further delay.

One other lack of uniformity on the ticket form arises from differences in translations of the Conditions of Contract on the tickets used by the carriers. The Committee has noted at least two French versions and several Spanish versions currently in use. Steps are being taken at Legal Committee level to attempt to achieve uniformity of translation and it is hoped that the carriers involved will co-operate to eliminate this additional area where lack of uniformity persists.

ITEMS OF A MORE TECHNICAL NATURE

The remainder of our report deals with those subjects which, while of general interest, are of a more technical nature and, at this stage at least,

appear to be primarily problems for the Legal Committee or Traffic Conferences. The subjects dealt with by the Legal Committee that fall within this category include the following:

(a) A proposed draft sea/air interline traffic agreement.
(b) Several questions relating to the handling of unchecked baggage and ticketing of passengers.
(c) Problems arising under the sales agency rules.

Additionally, we have been occupied with matters on the agenda of the Legal Committee of ICAO which are generally of long-range interest, rather than of pressing immediacy:

(a) Legal Status of Aircraft and the Legal Status of the Aircraft Commander.
(b) The 1957 Tokyo Draft Convention relating to Carriage by Air performed by a Person other than the Contracting Carrier.

Our report deals first with the Traffic items:

Draft Sea/Air Interline Traffic Agreement

At our Bermuda meeting we considered a recommended form of the Air/Sea Interline Traffic Agreement which had been drafted in Paris in March 1958 by a working group.

The purpose of the agreement is to simplify the handling of combined air-sea travel and to enable air carriers which are parties to the agreement to sell travel over sea carrier parties, and vice versa. As presently drafted, the form of the Agreement follows the pattern of the IATA Interline Traffic Agreements, i.e. an instrument which may be adhered to by air carriers and sea carriers which desire to become a party to it.

In reviewing this draft agreement, we ran into difficulties, not only of a technical drafting nature but also of substance which, in the absence of proper explanation, we could not overcome. A complete study of this draft agreement could therefore not be undertaken by us until we have the answers to those questions which we have specifically set forth in our minutes.

In summary, we are not satisfied with the agreement in its present form. Further study is required which we shall undertake at our next meeting, or at a meeting of a special sub-committee if that is requested by the Traffic people interested in this subject.

Conditions of Contract

During the discussion in Bermuda, a point was raised with respect to the present practice of the airlines in accepting value declaration for unchecked baggage. Under the Conditions of Contract, as embodied in Resolution 275(b), Members are obliged to accept value declaration by passengers in respect to checked and unchecked baggage, as well as other property (i.e., objects of which the passenger takes charge himself.) We do not have, however, complete information available as to the present practice of the airlines in this matter. Should there be any difficulty in obtaining insurance coverage for the particular purpose, this matter will be brought up for further consideration.

Form of Passenger Ticket

Questions were again referred to us regarding the sufficiency under the Warsaw Convention of one ticket covering two or more passengers. We reiterated the opinion expressed previously in 1949, namely, that it was highly preferable that a separate ticket be issued for each passenger, even where the passengers belong to the same family. Unless a separate ticket were issued, we are not sure whether the Warsaw Convention requirements

would, in fact, be met in all circumstances. Moreover, carriers would assume the difficult burden of establishing the fact that the legal requirement of "notice" had been met. This requirement is particularly important in non-Warsaw carriage where the validity of the provisions in the contract may depend on effective notice to the passenger.

Another suggestion which we considered and felt we must turn down was the possible elimination of the baggage weight information on the passenger ticket. We think that this weight information must appear on the passenger ticket. This is a requirement under the Warsaw Convention which, if not complied with, would deprive the carrier of the limitation of liability. When the Hague Protocol comes into force it will eliminate the obligatory character of the weight information. But even after the Hague Protocol comes into force, the weight information should appear on the ticket used in interline carriage because there will continue to be traffic governed by the Warsaw Convention to which the Protocol will not apply.

Agency Matters

Our attention was drawn to the language in the current IATA form of Sales Agency Agreement providing for indemnification of IATA and its Members by sales agents, and we were asked whether this could be remedied in a way that would be more palatable to such agents.

Our conclusion is that the present clause cannot be ameliorated in favor of the agent without lessening the protection it now affords to IATA and its Members. We do not feel ourselves competent, however, to suggest any lessening of protection, but would be quite willing to draft the appropriate language if this is the desire of the IATA Traffic Conferences or the IATA Executive Committee. We suggest, however, that in view of the new arbitration procedure, lately introduced in the IATA Sales Agency Rules contained in Resolution 810, the position of the agent is substantially improved and consequently the effect of the indemnification provision of the Sales Agency Agreement has become less drastic than previously.

In view of the new arbitration procedure, during our meeting in Bermuda we drew up a form for use by a suspended or cancelled agent seeking a review of his case by arbitration. We suggest that the form be included in the notice sent to the agents by the Conference Secretaries when advising an agent of his cancellation or suspension.

Convention Relating to Air Carriage by Persons Other than the Contracting Carrier

In our last year's report, we referred to certain ambiguities that may exist under the present Warsaw Convention when the carriage by air is performed by a person who is not in a contractual relationship with the passenger or the shipper. A typical example is the operator of a chartered aircraft under agreement with an airline or other third party. Since then, the Legal Committee of ICAO has had a meeting, in September 1957, in Tokyo, where it finalized the Draft Convention for the Unification of Certain Rules Relating to International Carriage by Air performed by a person other than the Contracting Carrier.

Briefly, the Draft Convention provides that, where carriage, which is governed by the Warsaw Convention, is performed by someone other than the carrier which makes the contract with the passenger or shipper, the rights and obligations of such other performing carrier (with certain exceptions) are the same as those of the carrier under the Warsaw Convention. The objective of the new Convention is to extend the limitation of liability enjoyed by the carrier, under the Warsaw Convention, to that person who performs the carriage but who does not enter into a contract with the pas-

senger or shipper directly. There is an added feature of the Draft Convention. It makes the contracting carrier responsible for the acts and omissions of the performing carrier, and reciprocally the performing carrier becomes responsible for the acts and omissions of the contracting carrier.

In December 1957, the Council of ICAO decided that the Draft Convention and its Legal Committee report on the Convention, supplemented by the Secretariat commentary on the text of the Convention, should be circulated to contracting States and all other States that had been invited to the Hague Conference, the European Civil Aviation Conference, and international organizations invited to the Hague Conference. However, at the time of our meeting in Bermuda, the ICAO Secretariat commentary was not available. Accordingly, we did not attempt to work out specific language changes needed in the Tokyo draft but dealt only with certain basic principles contained in the proposed Convention.

The following points deserve attention:

(a) As pointed out above, the Draft Convention attempts to combine two things. On the one hand, it extends the limitation of liability to the carrier performing the carriage and gives to passengers and shippers a direct right of action against the performing carrier. This principle would clarify the ambiguity under the Warsaw Convention. On the other hand, the Convention provides for an imputed or reciprocal liability between the contracting carrier and the performing carrier and makes them responsible for acts and omissions of each other. This principle, and the consequences that go with it, appears to be the price for the clarification.

IATA observers at the ICAO Legal Committee meetings objected to the reciprocal liability but the most that we could achieve to date was a provision setting forth certain exceptions to the rule that the performing carrier is responsible for the acts and omissions of the contracting carrier.

We still think that IATA should continue to object to this imputed liability between the contracting carrier and the performing carrier, as being an unreasonable principle introduced without justification.

(b) The scope of the Tokyo Draft is quite wide. It covers all cases in which the carriage is performed by a person other than the contracting carrier. This goes somewhat further than the original objective which was to deal *only* with problems which arise when the aircraft is a hire, charter, or interchange. We have no objection to this wide scope of the Draft Convention, provided that it does not prejudice the position of air carriers which are participating in an air carriage as successive carriers or substituted carriers.

We have discussed several special cases that may arise in practice, and on the whole we think all problems may be taken care of adequately in the final drafting.

(c) The Tokyo Draft also contains certain anomalies and ambiguities in respect to:

(i) The definition of carrier.
(ii) The conditions under which the new Convention is to apply.
(iii) The treatment of cargo.
(iv) The coverage of servants and agents of the carriers.
(v) Jurisdiction for actions against the carriers.
(vi) The imputation of liability by which the performing carrier may become directly responsible for the acts and omissions of the contracting carrier.

These points require clarification and at our next meeting in the Fall we shall undertake to draft appropriate suggestions to be submitted to ICAO when this matter will be put before a Diplomatic Conference.

Legal Status of the Aircraft and Legal Status of the Aircraft Commander—Formulation of Answers to ICAO Questionnaire

The ICAO Legal Committee has these items at the top of its agenda. A questionnaire drawn up by the Secretariat of ICAO was sent to all contracting States and through Head Office to IATA Members. The replies indicated forcefully that the actual experience of the airlines did not appear to warrant the drawing up of an international convention to regulate the rights and obligations of the aircraft commander or the status of aircraft in relation to crimes committed therein. In many countries the common law would seem to provide adequate authority for the protection of passengers and the safety of equipment. Therefore, any reasonable actions taken by pilots in command to comply with the requirement under Annex 6 of the Chicago Convention, para. 4.5.1, might be justified under national laws, without recourse to a further international convention.

We know that there are States which do not accept jurisdiction over crimes committed outside their national boundaries, and therefore in some cases a crime might be left unpunished. Instances, however, of this nature were rare and, if a State wants to do so, it could amend appropriately its existing criminal statutes, and extend its jurisdiction to include the cases not presently covered.

However, should ICAO persist in the drafting of a Convention on this subject, it would be in the interest of the airlines to make certain that nothing in the Convention should hamper the ordinary development of transportation. Any new Convention should then include certain principles to safeguard the interests of the airlines, such as (a) express authorization to the carrier or its agents or employees to hand over to the Authorities at a place of landing any passenger accused of the commission of a criminal offense on board the aircraft without involving the carrier or its agent or employee in liability; (b) provision that the aircraft, on board which the crime was committed, should not be detained, nor should its crew or passengers be detained in connection with the prosecution of a crime which was allegedly committed on board; (c) provision that the aircraft commander should have adequate authority under all circumstances to ensure the safety of the passengers and aircraft.

The information as to the actual practice of airlines in this matter, supplied by the Members, was not sufficiently complete as to warrant submission to ICAO at this time.

EXCERPTS FROM REPORT OF THE TRAFFIC ADVISORY COMMITTEE

Long-Term Developments

The Traffic Advisory Committee has felt for some time that advantages might be gained if means existed whereby carriers could discuss future Traffic developments on a longer term basis than that occasioned by the necessity of reaching binding agreements for a period of one year only. The same sentiments were expressed during the last AGM in Madrid. With this in mind, the Committee felt that some time should be made available at the Composite Conferences for discussions—without decisions—on possible trends. By doing this, carriers may obtain the general feeling of the industry towards future changes, and although there would be no commitment this might help

them with their own plans. The Traffic Director accordingly wrote to all Members drawing their attention to this proposal and asking them to submit papers on subjects which they felt should be ventilated in this manner. At the time of the meeting of the Traffic Advisory Committee in Nassau, no actual papers had been received, but some Members had mentioned subjects which they thought should be discussed. It is possible that papers will be submitted for discussion at Cannes, and Members have been reminded that the invitation is still open.

Traffic Documents

Tickets

Considerable time was devoted by the Traffic Handling and Accountancy Working Group (THWG) to the simplification of Traffic Documents and Procedures. While only a modicum of progress has been made on the IATA Interline Ticket, because of the complexities involved, the Group developed a more simple version of the Interline Baggage Tag, and has under consideration an improved procedure for the collection of excess baggage charges. The future possibilities of Interline Machine Ticketing are also under active consideration, in relation to various on-line experiments which are being conducted by the Member airlines. There is no doubt that anything which can be done to simplify ticketing procedures must be of value in the light of increasing numbers of passengers.

Air Waybills

Further consideration was given during the year to improving the Air Waybill. The THWG has now recommended a form which is an improvement over the old one. Extraneous material has been deleted and the layout generally has been improved. It is believed by the Working Group, however, that there is still room for further improvements and a recommendation has been made to the Composite Conferences that Members should be permitted to use experimentally any form of simplified Air Waybills for journeys involving not more than one intermediate transfer point. The Composite Conference at Nassau adopted this recommendation for a trial period of one year. It is hoped that trials of this kind will yield experience which may show that a new and very much simpler form of Air Waybill can ultimately be adopted for all purposes.

The Spring Conference in Nassau also adopted a further recommendation of the THWG to permit carriers to accept charges collect shipments without restriction at their own risk, thus eliminating the delay involved by having to make arrangements in advance. This should expedite the movement of perishable goods.

Interline Agreements

A worldwide system of traffic movement has been built up during the past few years through the medium of the IATA Multilateral Interline Agreements, and it continues to grow. I appreciate that these agreements lead to certain complications, particularly where competition from non-IATA carriers is involved, but there is little doubt that the present interline machinery is popular. At the present moment 138 carriers are parties to the Interline Traffic Agreement as compared with 130 at this time last year. 109 carriers are parties to the Interline Baggage Agreement as compared with 95 a year ago, and 88 carriers are parties to the Interline Cargo Handling Agreement as against 76 a year ago. It is perhaps worth noting that there is no other

IATA activity which seems to cover such a large number of air carriers as does this system of Interline Agreements.

During a 9-month period in 1956-57, approximately 500 applications and concurrences to these Agreements were processed through IATA Head Office, whereas for the same period in 1957-58 the number was over 1000. Without the IATA scheme, carriers would have to make separate bilateral agreements in each and every case. This seems to be one of the ways in which IATA renders a service to the air transport industry as a whole as well as to its own Members.

Expediting the Movement of Cargo

Recommendations have also been made to the Facilitation Advisory Group to the effect that, if possible, cargo manifests should be abolished as a governmental requirement and that Members should not replace these documents with any similar list to go forward with the flight. It is believed that the elimination of cargo manifests will result in a substantial saving of time and money to all Members and, at the same time, will make speedier loading of aircraft possible. It is thought also that, if governments can be induced to accept this idea, the possibility of aircraft being delayed in cases of transfer and trans-shipments will be reduced.

Every effort must also be made to simplify and streamline customs procedures for air cargo. Delays caused on the ground are one of the major factors at present hindering general expansion in this field.

Air Cargo Directory

For some time now, the production of an IATA worldwide directory for air cargo has been under consideration. The basic object of this project is to make available full and up-to-date information on the facilities available for the interline movement of consignments requiring special treatment and to reduce to the greatest extent possible the work involved in making special advance arrangement in such cases. The steady growth of air cargo has created a definite need for such data, and Members have shown considerable interest in the scheme.

The Traffic Advisory Committee decided that any scheme of this nature should be fully self-supporting and should not be allowed to cause any increase in the general dues paid by Members. Although it would have been possible to produce the Directory in Head Office and to recoup the cost by selling copies to Members requiring them, futher examination showed that it will be possible to get the information published without any additional cost either to IATA or its Members. Arrangements have now been concluded for the publication of all the information which IATA carriers require.

Interline Claims

The IATA Interline Claims Procedures Agreement, setting out uniform principles and practices for the handling of Interline Cargo Claims, has considerably enlarged its scope during the last twelve months. This agreement has now been signed by 48 carriers, and it has certainly helped the prompt and sensible settlement of cargo claims both between carriers and between carriers and the general public. Any carrier which is a party to the IATA Interline Traffic Agreement may become a party to this Agreement.

Restricted Articles

The new and extended Third Edition of the IATA Regulations Relating to the Carriage of Restricted Articles, issued in English, French and Spanish, became effective on 15th March, 1958. Approximately 100 new commodities

have been added to the list of items requiring special treatment. They include several chemicals and other substances of industrial importance.

The IATA rules now cover nearly 2500 types of cargo which require special handling, and for each they prescribe the proper packing, handling, storage, and labelling needed. They make it possible for such shipments to be moved over interline routings without delays for repacking or other purposes. This, of course, is particularly important in the case of isotopes and other radioactive substances whose effective life is strictly limited. The IATA Restricted Articles Working Group is also actively considering further problems connected with packaging requirements for all-cargo aircraft.

Until recently, only a few governments have required exceptions to these rules, and then only of limited scope, and it appears that, generally speaking, they are fully satisfied with the safety measures established by the Group. Recently, however, governments have come forward with more extensive modifications which might seriously impair the usefulness of the regulations, and every effort is being made to get them withdrawn. The IATA Working Group maintains a very close liaison with governmental and technical organizations concerned with the carriage of this type of goods.

It will be of interest to Members to note that the IATA regulations are, in fact, the only uniform international regulations for handling cargo by any means of transport and the IATA code has been incorporated into the aeronautical regulations of 14 countries and has been extended to apply to the operations of 135 air carriers.

Physical Handling

One point of importance has emerged during the past year. For some time now there has been a feeling among Members that more attention should be devoted through IATA channels, to the actual handling methods employed for passengers and cargo, particularly at airports. This point was raised by the Traffic Handling and Accountancy Working Group and the constitution of the Committee was modified at the Miami Conference to include more experts on this particular activity. At its meeting in Rome this year, the THWG went further and put forward a more radical proposal which would, in fact, have established a semi-autonomous group to deal specifically with this subject. The new group would not have formed an integral part of the THWG but would normally have met separately, and only with the main group when matters of common interest were involved.

For some years now there has been in existence a special committee called the European Traffic Handling Committee, which has dealt specifically with handling matters in Europe, where, because of many reciprocal handling arrangements, the subject has been of particular importance to carriers. This special committee has recently been established as a sub-committee of Traffic Conference 2, in order to bring it properly into the IATA orbit.

The Traffic Advisory Committee has given serious thought to this problem of physical handling, but without in any way minimizing its importance it appears to be one of those subjects which does not fit too easily into the present structure of IATA. One of the difficulties is that physical handling does not belong to the same department in every airline. In some, it is dealt with under Sales; in others, by a special Traffic Department; and in others again, as one of the functions of the Technical Department. As far as IATA is concerned, a lot of useful work has been done through the Technical Committee on the general needs in aerodrome buildings. Similarly, the Facilitation Group has produced considerable improvements in relation to government formalities and documents. The THWG has properly followed its Terms of Reference in developing Traffic procedures and documents to complement the decisions taken by the Composite Conferences. It seems, however, that the

proper processing of load at any airport must depend in some respects on the action taken by these three groups and involves also other aspects which are not yet being studied collectively. With the increase in size and speed of aircraft, the problem will become of great financial importance, and it is not one which should be overlooked, although, as I have explained, it does not appear to be one which can be handled completely by the Traffic Advisory Committee.

RESERVATIONS

In the last report to the AGM, mention was made of the situation with regard to No-show Charges and Reconfirmation procedures. The recommendations made by the Reservations Working Group were submitted to the Composite Conference at Miami and a two-phase trial plan was adopted which requires passengers originating in Canada, the U.S.A. and Mexico to pick up their tickets a fixed time in advance of departure; passengers holding return reservations or continuing reservations from Canada or the U.S.A., as well as Westbound reservations over the North Atlantic are also required to reconfirm their intention to use such space by a specified time limit. While the maximum benefit arising from these rules will only become evident from late August to October when the peak Westbound flow takes place over the North Atlantic, it would seem at present that they are accomplishing their objectives and public acceptance has been unusually good.

It is fully recognized that conditions and facilities as well as travel habits differ widely in many parts of the world, and it was probably for this reason that the Traffic Conferences were unable to accept the implementation of ticketing time-limits and reconfirmation rules on a worldwide basis. In order to take into account all local problems in this respect, special groups have been set up in Europe, the Middle East, the Far East, Africa, and South America to see whether local practices can be developed which would be of benefit to the carriers concerned, and also to find out whether or not a practice which appears successful in one area can be applied advantageously in other areas.

Eighteen Local Interline Reservations Working Groups, situated at most of the major interline connecting points, are dealing with day-to-day problems experienced in this connection, and it is hoped that similar groups will soon be in operation in other locations where these problems are particularly acute. Members may feel that this degree of attention is somewhat excessive, but it is worth pointing out that a large proportion of the revenue lost on account of "No-shows" occurs at interline points, and is due more to the malfunctioning of interline arrangements than to the fault of the passenger.

While the Reservations Working Group has continued to make substantial progress in refining interline reservations procedures, one of its most recent activities has culminated in a recommendation which has been made to the Composite Conference for the introduction of a cargo counterpart to the Air Traffic Conference of America (ATC)/IATA Reservations Interline Message Procedures (AIRIMP) which has been successfully applied in the passenger field since 1955. One of the main selling points for air cargo is speed, and the Reservations Working Group feels that consistent uniformity in the practices covering cargo reservation messages will not only assist in this direction, but will also result in increased accuracy and economy.

The Reservations Working Group's "Code of Reservations Ethics" proposal was distributed early in 1958 to all travel agents on the IATA lists. It will be recalled that this Code was produced to eliminate some of the reservations difficulties being experienced by agents. It is gratifying to see that many of the local city groups subsequently have been keeping a watchful eye on this question insofar as its compliance by agents is concerned, and certain

of the national agency organizations have also been asked to endorse its principles.

More effective electronic machine processing of reservations, which will undoubtedly be the next technological phase in reservations handling, are also being given active study by the reservations experts, particularly in connection with the problems which may arise due to the use by Member airlines of different types of electronic equipment. The problem is really one of arranging expeditious communication between different systems. Suggestions have been made to the Technical Committee calling for the establishment of a Joint Air Transport Association of America (ATA)/IATA Sub-group to look into the various aspects of this problem in order to avoid difficulties arising in the future.

Use of Computer Equipment In Relation to Fares and Rates

As Members will be aware, one of the problems which we face in connection with Composite Conferences is the difficulty of dealing with a vast mass of figures both at the Conference itself and afterwards, when the agreements reached by the Conference are turned into the actual fares and rates to be used by each carrier. The size of the task has now reached alarming proportions, and, although actual figures are difficult to obtain, there is no doubt that carriers, in particular the larger ones, are spending considerable sums of money in the computation of their own fares and rates.

With this in mind, the Traffic Advisory Committee decided that an examination of the possibility of using electronic computer equipment to deal with this problem was fully justified. Many Members already use this equipment themselves in connection with their accounts, store-keeping, and Technical activities, and there appear to be considerable possibilities in its application in the field of fares and rates. A special group was established, therefore, in 1958 in order to examine the problem generally, and the services of an expert adviser were obtained. Considerable progress has already been made, and it is hoped that by the time of the Composite Conference in Cannes it will be possible at least to advise all Members as to whether further examination is likely to be worthwhile.

While it needs little imagination to picture the sort of developments which might become possible in this direction, and the considerable savings which might be effected, it would be wrong to be over-optimistic at this particular point. We hope that it will prove of material assistance, but even if we find that electronic equipment cannot give us all the help which we so urgently require, the Traffic Advisory Committee would have been failing in its duty if it had not arranged for the possibility to be explored. It is worth emphasizing, too, that equipment of this kind, while it may help us to interpret our own agreements, cannot make the agreements for us.

TECHNICAL COMMITTEE REPORT

(Summary)

The Airlines' Technical Problems

The goal of IATA technical activity during the past year has been to ensure that the essential requirements of the new turbine-powered aircraft now coming into service will be met. This has involved more than 35 international meetings in the past 12 months, dealing with problems of world-wide character and requiring the development of industry philosophies and policies, with problems of planning and implementing regional activity, and with cooperation with other international bodies to provide them with guidance as to the basic operational requirements of the industry as a whole.

Close ties have been maintained with other international organizations including the World Meteorological Organization, the International Telecommunications Union and airline implementation agencies. In particular IATA's close ties with ICAO have been strengthened, as ICAO's task of reorganization of aviation facilities and services to meet requirements of our turbine-powered aircraft has made increasing demand for the airlines' advice as to future needs in this field.

IATA Technical Conferences

Much of IATA's broad technical activity culminates in the Technical Conferences, where it is possible to pool the knowledge of the airlines as well as of the manufacturers and of the civil and military agencies concerned. The latest Conferences, of which two have been held since the last General Meeting of IATA, provided opportunity for analyzing the many factors which affect the efficient operation of turbine-powered aircraft as well as their overhaul, maintenance and engineering and the problems of practical air traffic control requirements and of instrument approach and landing.

Problems of Air Traffic Control

The IATA Conference which met in Monaco in September considered that introduction of high-speed turbine-powered aircraft into service in large numbers makes a positive system of air traffic control absolutely essential to safe and economic air transport operation.

The Committee felt that the higher closing speeds of the new aircraft require that practical steps be taken toward the improvement of present air traffic control facilities and procedures, and it endorsed the following Conference recommendations:

* the boundaries of Flight Information Regions should be based on route structure configuration and *not* on national boundaries;
* a greater measure of freedom of operation should be allowed to all users of airspace below a certain level of the airspace not required for public transport operations;
* routes should be established within controlled airspace which will permit a greater choice of routings and separation criteria;
* measures to improve the coordination between civil/civil and civil/military units, incorporating the expanded use of appropriate radar facilities and communications links.

In this connection the Committee stated that the "see and be seen" concept must be progressively eliminated, and agreed a program of measures by which a system of positive air traffic control could be brought into being in the next five years. It was stressed that all high-speed, high-flying aircraft must comply with instrument flight rules regardless of weather conditions, that below the airspace in which these aircraft operate IFR flight plans should be filed for each flight and that pilots should not be allowed to cancel such plans nor to make use of IFR/VMC when in level flight.

Thorough consideration of right of way rules had resulted in the decision that they must be replaced by "giving way" rules so that aircraft in proximity to each other would both be required to give way.

Approach and Landing

In consideration of developments in instrument approach and landing the Committee noted that great advances had been made recently in the transmission of radio guidance signals and that there has been a corresponding

improvement in the ability to couple aircraft to the guidance patterns so that they respond quickly and accurately. New techniques of great subtlety will soon enable aircraft to ignore small disturbances in the radio patterns and to maneuver at both high and low speeds with equal sensitivity.

The Report made note of two remarkable systems which can land aircraft accurately and without the pilot's touching the controls. These systems, which have been extensively flight tested, are not yet developed in the form best suited to civil aircraft operations, but the Committee felt that it would be only a few years before aircraft would be landing as a matter of course on the foggiest nights.

Aircraft Maintenance and Overhaul

The Committee reported that there had been a free exchange of views among operators and manufacturers on the latest developments and techniques for maintenance and overhaul of turbine-powered aircraft and their engines.

Because the economic penalties of delays in ground handling increase with the size and speed of aircraft, there is need to speed up all aspects of general maintenance, particularly those phases involved in normal rapid turn-round of aircraft, it stressed. For this reason, and because of the growing complexity of aircraft instrumentation and systems, more rapid diagnosis of snags is needed.

The Report stated that some operators were concerned about the provision of aircraft spares where overhaul shops are remote from the aircraft factory. Among suggested solutions was the possible establishment, by manufacturers, of depots at central locations in various regions for some type of after-sales provisioning which would reduce the size and cost of the individual airline's holdings of spares.

The Committee expressed interest in engine overhaul test schedules and in the development of longer service life for engines. It was hoped that regulatory authorities and engine manufacturers would be more flexible in their future thinking on the subject since longer engine life would mean that fewer spares need be purchased by the airlines. Various techniques for reducing spares holdings, including the progressive overhaul of engines, were commented on.

Instruments

The Report emphasized the importance of turbine fuel filtration both on the ground and in the aircraft and noted that the main job of cleaning the fuel must be done on the ground by the fuel suppliers in order to eliminate the necessity for complex and heavy airborne equipment. In this respect, fuel suppliers were recommended to take a hard second look at their fueling procedures equipment and techniques, since fuel free from water and dirt is of major importance for turbine engines, especially in relation to maintenance and overhaul costs.

The Committee recommended research into the development of a simple airborne vibration indicator to facilitate daily maintenance and trouble shooting and thereby reduce aircraft enroute technical delays. Further development of maintenance recorder techniques, the Report suggested, might make possible a new concept of engine overhaul which would extend engine component life and effect further savings.

Pointing up the airlines' concern over the need for more accurate methods of measuring fuel quantity on board aircraft before take-off and throughout flight, the Report stressed that quantity gauges and flowmeters should indicate the amount of fuel by weight rather than by volume.

In view of the many problems associated with the use of water injection for power augmentation the Report pressed engine manufacturers to investigate alternative methods in future engine designs. It noted progress in the development of jet thrust reversers and in improvements to take-off monitors for turbine aircraft.

Pointing out that these Conferences have been attended by technical specialists of airlines, governments, manufacturers, defense forces and research establishments from every continent, the Committee questioned whether there had ever been such an international coming together of such a number and variety of experts, representing such a vast fund of knowledge and experience in the aviation field, solely to cooperate and coordinate efforts toward the common aim of safe, regular and economical air transport. The know-how achieved at these Conferences should bring us much closer to the efficiency desperately needed in the operation of these new vehicles.

In the Conferences the new aircraft were put through exhaustive trial operations on paper, to make certain that their actual operation over the coming years would be guided by the total of all available international knowledge and experience, and to ensure that they are safe, economical and efficient.

Factors Affecting Turbine-Powered Operations

Summarizing Conference findings on some of the more important of the complex phases of this subject, the Committee reported:

Turbine Fuels: Fuel is one of those intractable items which represent a large percentage of the airlines' direct operating costs. Any tiny savings which can be made on the operator's cost per gallon rapidly mushrooms to such proportions that it can tip the ultimate balance between profit and loss. And at the rate which the turbine engine gulps down the fuel, this factor cannot be over-emphasized.

Conference discussions have culminated in a consolidation of operators' views as to the type of kerosene fuel wanted by the airlines which has been passed on to fuel suppliers. It should assist in simplifying the suppliers' task and, more important, should ultimately result in a cheaper fuel for the operator.

As the result of examination of fuel supply, specification, management in flight, measurement and even dumping, it was found that economical operation will require more accurate and reliable fuel quantity indication systems; adequate weight meter tanking facilities; absolute cleanliness of fuel supply and thus improved filtration; and under-wing refueling as a desideratum.

Turbine Engines: The capabilities and requirements of turbine engines in all phases of flight have been exhaustively explored, with regard to the effects of atmospheric deviations, the consequences of noise suppressors and thrust reversers and the like. There was ample evidence that hail and rain have no adverse effect on performance, but agreement that engine icing during flight requires further study.

Final phases of operation: The economics of jet operation are such that jets should not be subject to holding, but should be brought directly into approach. Informal and general conclusions as to the best techniques for normal operation in approach have been reached.

Passenger comfort: On the whole, the turbine-powered aircraft means smoother flight for the passenger; and the principal limitations on climb and descent will be those of passenger comfort and catering convenience.

External noise: After detailed review of manufacturers' progress in

development of suppressors and of preferred take-off techniques, it was felt that jet noise levels will be no greater than those of piston-engined aircraft.

Operation under extreme climatic conditions: Neither polar nor tropical conditions present particular difficulties. For take-off conditions, traditional coolants, such as water methanol, although undesirable, may have to be used.

Good housekeeping: Because of the suction power of jet engines, care must be taken to avoid their ingesting debris, tools or nuts and bolts.

Navigation and Communications Requirements and Aids

The 1957 Technical Conference was the first international discussion of the new and important Doppler radar navigation system, which can measure and display to the pilot continuous indication of aircraft ground speed and drift angle. These two quantities, together with aircraft heading, comprise the basic data for navigation; and can be coupled with various types of navigation computers to perform other functions. Doppler radar is thus of great significance to operators since, on the basis of better wind information, the quality of meteorological forecasts will be improved and considerable economic benefit is likely to accrue from flight planning.

While Doppler systems must undergo further evaluation, it has already been possible to evolve a new navigational philosophy, based on its availability, and taking into account the advantage—economic and otherwise—of self-contained aircraft navigation without cooperating ground stations. The new view emphasizes the distinction between navigational requirements and navigational aids and envisages operational requirements for navigation accuracy of a given order being met by a combination of aids, as by Doppler radar, referenced at suitable intervals only by ground base navigation facilities.

Communications requirements: Turbine-powered operation will pose no new communications problems, but will aggravate existing ones. Improved quality for voice communications will be required in the foreseeable future; and there will be an ultimate need for automatic data transmission for routine communications.

Continuing study of both navigation and communications needs will be required.

Meteorological Requirements

There is a close relationship between achieving the optimum flight path and the accuracy of forecasting weather elements. This means not only improved accuracy, but new elements of information.

The Conferences have foreseen a need for recording and broadcast of in-flight weather reports from aircraft flying over areas where upper air reporting stations are scarce, but felt that these should be limited to wind and temperature readings which will eventually lend themselves to automatic recording and transmission.

IATA has already asked World Meteorological Organization to provide operators with more adequate mean statistical winds and temperatures.

Research into jet streams and clear air turbulence, must still be continued, but has already progressed to the point where met services should be able to give forecasts of these phenomena.

Recommendations for improvement of weather charts and related items, landing reports and landing forecasts and transmission of weather information to aircraft in flight have also been made.

Airport Buildings and Aprons

Conference discussions of the turbine-powered aircraft's requirements as they will affect airport building and aprons have resulted in the publication of new and widely-circulated reference documents which provide the airport planner in the turbine age with a valuable guide—complete with signposts to the future and warnings about blind alleys.

The advice in these documents proceeds from these basic principles:

* maneuvering of turbine-powered aircraft on the apron should be carried out under their own power;
* hydrant refueling is desirable where large quantities of fuel are to be supplied to turbine-powered aircraft in a short time;
* open apron systems are undesirable and, where aircraft cannot be parked on stands immediately adjacent to the terminal building, pier finger systems best meet the airlines' requirements;
* use of passenger-carrying vehicles will be even more unsuitable with turbine-powered aircraft operations than with piston-engined aircraft.

The new documents also contain general guidance on turbine engine blast, heat, noise and fumes, as well as analysis of various apron systems and related requirements, fixed servicing installations and apron load handling facilities.

Flight Planning Requirements

Flight planning procedures will be developed by the individual airlines to meet their own needs, but on an overall basis, the economic effects of flight planning on operations will be highly significant. The relevant considerations can be divided into two broad categories: those under the control of operators in partnership with manufacturers (weight control, performance, engineering considerations and the like); and those beyond their control.

It is possible that all efforts towards efficient operation of turbine-powered aircraft could be completely outweighed by the necessity to take into consideration in flight planning the inability of state-controlled services (in particular air traffic control) to match the attractively high improvements in performance—in the widest sense—provided by jet aircraft.

One is already faced with the probability of increased vertical separation standards at the higher flight levels and, if efficient airspace utilization is not properly organized, severe penalties will be entailed.

Flight Crew Training

The airlines have benefited profoundly from the willingness of the U. S. Defense Department to make available to them freely the results of its vast experience with the new aircraft, particularly in this field.

Relations with ICAO

The Sixth Aerodrome and Ground Aids Division meeting of ICAO produced a number of recommendations which were generally satisfactory from the operators' point of view, relating to runways, taxiways and slopes and to the provision of runway strength information. Useful work was also done on obstruction clearing and marking requirements, instrument approach conditions, braking on icy runways and heliport requirements.

The sixth session of the ICAO Communications Division brought to an eminently satisfactory conclusion IATA's work on principles and procedures for radiotelephony operations. IATA's publication on this subject was used as a basis for amendments to ICAO Annex 10 on radiotelephony procedures and ICAO voted to produce an instructional manual based on the format and

style of the IATA volume to facilitate their worldwide application. The division's action is considered a fine proof of IATA initiative in a subject of great importance to the routine operations of the air transport industry.

Relations with WMO* and ITU**

IATA represented the airlines at the WMO Commission for Synoptic Meteorology where their position was well maintained on such subjects as average visibility, definition of gust, aircraft met reports, met codes, tone-casting of winds and temperatures for high level flights, and the like.

IATA also prepared and submitted to the ITU Consultative Committee for International Telegraphy and Telephony an assessment of airline requirements for leased circuits in the 1959-62 period. These show a trend toward rapid expansion of the networks needed by the airlines.

Regional Planning

IATA's cooperation with ICAO in the planning of regional facilities has increased in tempo with the growth of air traffic and the advent of turbine-power. Reviewing regional situations, the report said:

South America/South Atlantic: IATA has developed a schedule of basic requirements for this area defining facilities and services required for safe and efficient operation in the region. These have been presented to the states concerned, and while all have not been accepted, there has been a large measure of agreement on these requirements.

Caribbean Region: In the past year, IATA has made an assessment of area forecasting which was introduced in this region on a trial basis and has investigated certain important aerodrome problems and made its findings available to governments.

South East Asia and Middle East: A thorough analysis has been made of the airlines' future operational plans and new requirements in this area for presentation to an ICAO Regional Air Navigation Meeting.

African/Indian Ocean Region: The problems of this region, which have not so far been reviewed in the light of the airlines' future plans, will be subjected to an initial investigation to establish some basic requirements for the information of states.

North Atlantic Region: An IATA Technical Panel has been actively studying means by which the present air traffic control situation and its resulting restrictions on flight operations can be alleviated, and in taking action with the authorities concerned to get implementation of the facilities and services recommended by a special ICAO meeting in 1956.

Throughout the year, the IATA North Atlantic Pre-Flight Coordination Study Group has been studying the problems of traffic congestion, particularly in the vicinity of the eastern seaboard of North America, and is also considering a scheme for the organization of North Atlantic airspace. Further study is required of congestion in the New York/Gander areas, which is one of the major sources of North Atlantic traffic restrictions in mid-ocean.

As a long term project, the Panel is investigating in cooperation with governments the functional requirements for automation of the air traffic control system in this area.

The Panel has also proposed that high frequency radiotelegraphy communications in this area be discontinued from April 1, 1959; that the HF

* World Meteorological Organization.
** International Telecommunications Union.

radiotelephony system be reorganized and expanded by the use of the frequency family previously devoted to radiotelegraphy.

European-Mediterranean Region: Several years of planning reached a climax in ICAO and WMO meetings earlier this year on air navigation and meteorological communications. Strenuous efforts are being made to improve the efficiency of air operations in this region and extensive revisions of the regional plan proposed by the two meetings will require further follow-up activity.

IATA has also maintained full cooperation with the North Atlantic Treaty Organization's Committee for European Airspace Coordination.

ICAO Implementation Panel

IATA has taken an active part in the work of the special ICAO Panel dealing with the implementation of regional facilities and services. In this connection, the airlines feel that implementing regional facilities and services should be considered as legitimate government expense rather than as a further burden on the airlines. The only remaining source of financing is the airlines themselves. The activities of the panel have been extended to the end of this year.

Future Trends

If past experience is any guide, airline technical specialists will be busier than the proverbial one-armed paper hanger during the next few years. The introduction of new equipment always brings to light new problems, some of them anticipated and others which cannot be foreseen at this stage.

The Committee's report has gone at length into those which have been foreseen. In the future, it is likely that operators will be faced initially with operating restrictions at certain localities where runway extensions and terminal facilities have not been completed. They will have to assess the capabilities and limitations of Doppler radar navigation and will have to develop further the new navigation philosophy being based on this aid in conjunction with ground facilities.

Other fields which will require close attention are problems of approach and landing and aircraft instrumentation, automation of communications and of air traffic control and the like.

There is every sign that very extensive effort must be expended in order to bring the new generation of turbine-powered aircraft to life as a practical tool in air transportation.

JUDICIAL AND REGULATORY DECISIONS

By Joseph Davis
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REMEDIES AGAINST THE GOVERNMENT FOR VIOLATIONS OF PROPERTY RIGHTS

In furtherance of military objectives, the United States, in 1950, acquired Hunter Field from the city of Savannah, Georgia. In February of 1952, a land development Corporation purchased seventy-five and one-half acres of land located one mile east of Hunter Field. In December, 1953, the United States began operating jet aircraft from Hunter Field in such a manner as to fly directly over the Corporation's property. Landing and take-off flight patterns of these jet craft brought them over the Corporation's property at altitudes lower than propeller driven planes, which have formerly operated out of the field.[1] Unable to sell many lots,[2] as a result of the proximity of the jet flights, the Corporation filed suit alleging that the flights did substantially interfere with the use and enjoyment of the land and that this action constituted a taking. In *Highland Park v. United States*,[3] the court held that an easement was taken on the arrival of the jet craft.[4]

The easement theory is not the only one available to aggrieved parties.[5] Since the passage of the Federal Tort Claims Act, the United States has waived immunity in the common law tort field with a few exceptions.[6] Actions in tort applicable to this particular inquiry are trespass and nuisance. In addition to discussing the possibility of successfully suing the United States under these theories, the article contains some discussion of problems that may arise after one judgment has been secured against the government and the same party is seeking further relief due to a change in conditions.

Easement

Congress has provided a procedure for suing the United States in the easement cases, often called inverse condemnation, in the District Courts,

[1] The aircraft, ninety in number, also created greater noise, and more vibration. People in the area complained of windows rattling, interruptions of conversations, interference with television and radio reception and other uncomfortable incidents.

[2] Prior to the arrival of the jets, February, 1952, until 1954, 40 lots were sold. In the years 1954 and 1955 only 8 lots were sold. Furthermore, money lending institutions were not willing to grant loans for the sale of this property or the construction of homes thereon.

[3] Highland Park Inc. v. United States, 161 F. Supp. 597 (Ct. Cl. 1958).

[4] The court relied on United States v. Causby, 328 U.S. 256 (1946). A United States Air Base was located near the plaintiff who was a chicken farmer. The noise and light given off by the airplanes greatly disturbed production, and many chickens killed themselves by running into walls. The plaintiff also complained of personal disturbances and pointed out to the court that the purpose the land was purchased for could no longer be accomplished. The court held that the United States had taken an easement in the property and allowed the plaintiff recovery. Damages in these cases is the decline in value of the land due to the easement.

[5] The concepts expounded in the Causby and Highland Park cases are peculiarly a part of public law. Private persons do not deal with the Fifth Amendment. U. S. Const., amend. V, ". . . nor shall private property be taken for public use without just compensation." One may grant an easement to another for compensation or not. After a length of time, under certain conditions one may have an easement in another's property without compensating the holder of the fee. The only remedy available to one whose property is invaded in a private situation analogous to the Highland Park case would be an action in trespass or an injunction to prohibit further incidents of this nature. At common law, one could not waive the tort and sue on a theory of quasi-contract when real property was involved, as they could with personal property.

[6] 28 U.S.C. § 1291, 1346, 1402, 1504, 2110, 2401, 2402, 2411, 2412, 2671-2680.

as well as in the Court of Claims;[7] thus eliminating the problem of sovereign immunity. The easement taken by the United States in these cases is an *interest* in property, the *extent* of which is determined by the judgment granted by the Court. In the *Highland Park* case the judgment was stated as follows:

> "Defendant is vested with a perpetual easement of flight over the plaintiff's property at an elevation of 100 feet or more above the ground with airplanes of any character."

If the defendant began to fly planes at fifty feet, a new problem would exist. If the judgment gave the defendant a right to fly propeller driven planes, and then the defendant began to fly jets,[8] the plaintiff no doubt would seek further relief. The case of *Newton v. Manufacturers' Ry. Co.*, contains a problem similar to that presented here.[9] The city of Toledo, Ohio, held an easement in the property owned by the plaintiff and created a public park. The defendant then took a right-of-way in the property and had begun constructing a railroad thereon. The court held that there was an additional servitude on this land entitling the plaintiff, owner of the fee, further compensation.[10] The indication of this case being that if the government exceeds the rights granted by the judgment and imposed an additional servitude on the land, a new cause of action will not be barred by the first recovery. A most obvious case where an additional servitude is placed upon the land is where the judgment allows single engine propeller driven planes to be flown over the plaintiff's land, and defendant begins flying six-engine jet aircraft. The increase in noise and vibration would certainly seem to give rise to a new cause of action.[11]

TRESPASS

In the *Highland Park* situation, the trespass[12] is the recurring flights at low altitudes over the plaintiff's real estate. Not all courts consider this type of activity to be a trespass.[13] Those jurisdictions that do recognize this activity to be a technical tort provide the plaintiff with nominal damages unless actual damages can be shown.[14] In no cases of this type have actual damages been shown. A case like *Highland Park,* where there was actual detriment to the value of the property, is no doubt the type of damages which the courts are seeking.[15]

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[7] 28 U.S.C. § 1346 (a) (2), 1491.

[8] In Herring v. United States, 162 F. Supp. 769 (Ct. Cl. 1958), the court stated the interest taken as follows: "Upon payment thereof defendant shall have an easement of flight for light, propeller-driven, single engine airplanes at a minimum elevation of 45 feet above the surface of the ground and higher." This judgment is rather narrow and does not allow the defendant room to expand without subjection to further liability.

[9] 115 F. 781 (6th Cir. 1902).

[10] A similar result was reached in Hatch v. Railway Co., 18 Ohio St. 92 (1868), where a canal company sold its right-of-way to a railroad company.

[11] See note 8, *supra.*

[12] Suits under the Federal Tort Claims Act are limited to recovery of monetary damages. 28 U.S.C. § 1346 (b).

[13] The court in Hinman v. Pacific Air Transport Co., 84 F. 2d 755 (9th Cir. 1936), specifically rejected this doctrine. The defendant operated out of the Los Angeles airport and flight activity was quite heavy. There are apparently no cases where the "recurring low flights" theory of trespass was advanced under the F.T.C.A.

[14] Smith v. New England Aircraft Co., 270 Mass. 511, 170 N.E. 2d 385 (1930), recurring flights at one hundred feet was trespass. In Delta Air Corp. v. A. L. Kersey, 193 Ga. 862, 20 S.E. 2d 245 (1942), flight at twenty-five to one hundred feet is a trespass, (dictum).

[15] See note 2, *supra.* Also see note 4, Causby. In that case a chicken farmer was unable to use his property for the purposes purchased, because of annoyance of airport.

In an action where actual damage can be shown, the plaintiff may recover against the federal government by satisfying the criteria of the Federal Tort Claims Act. The pertinent section of the Federal Tort Claims Act is as follows:

> ". . . for injury on loss of property or personal injury or death caused by the *negligence* or *wrongful act* or omission of an employee of the government while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred." (emphasis added)[16]

Traditionally trespass is a form of action where plaintiff need not allege and prove negligence or a wrongful act; it is a form of strict liability. The question has arisen under the statute which requires negligence or a wrongful act, whether the government will be liable for trespass due to unknown causes. In *United States v. Praylou*, a government plane on official business crashed onto plaintiff's land damaging his property and injuring his children.[17] A South Carolina statute imposed strict liability in this type of situation. The government argued that the plaintiff would have to show negligence or a wrongful act before recovery could be had. The court held that trespass was within the purview of the statute and found the government liable applying South Carolina law. Another approach was found in *United States v. Hull*, where *res ipsa locquitur* was invoked when a window fell on a customer's hand in the post office.[18] Traditionally in these cases where the wronged party would have difficulty in proving negligence, but most probably negligence did exist, the court raises this doctrine and leaves it to the defendant to prove freedom from negligence. Although still in the realm of negligence, by changing the burden of proof, the court approached strict liability.

Dalehite v. United States contains language that the government would not be liable without a showing of negligence although the case was not decided on this point.[19] In *United States v. Inmon*, plaintiff's son was injured by a blasting cap found on land formerly occupied by the government.[20] Although not a trespass case, a theory of strict liability was advanced. Citing *Dalehite* for the proposition that the government would not be liable unless there was a showing of negligence, the court held for the government.[21] The trespass occurring due to unknown causes must be sustained on a theory of strict liability and is much different than the *Highland Park* situation. The recurring low flights are intentional acts and surely come within the purview of the statute, which only requires an act of negligence or wrongful act.

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[16] See note 12, *supra*.

[17] 208 F. 2d 291 (4th Cir. 1953).

[18] 195 F. 2d 64 (1st Cir. 1952).

[19] 346 U.S. 15 (1953). In this case an order to produce a certain fertilizer known as F.G.A.N. emanated from an administrative agency. The basic ingredient of the fertilizer was ammonium nitrate often used as a component in explosives. The product was loaded onto two ships off the Texas City docks. A tragic explosion occurred the following day. The court held that the injury was within an exception, 28 U.S.C. § 2680 (b), "Any claim based upon an act or omission of any employee of the Government, exercising due care, in the execution of a statute of regulation, whether or not such regulation or statute be valid, or based upon the exercise or performance or the failure to exercise or perform a *discretionary function* or duty on the part of a federal agency of an employee of the Government, whether or not the discretion involved be abused." (emphasis added).

[20] 205 F. 2d 681 (3rd Cir. 1953).

[21] In Harris v. United States, 265 F. 2d 765 (10th Cir. 1953), the government, while attempting to spray property adjacent to the plaintiff's, sprayed the plaintiff's crop with an injurious insecticide. The plaintiff had to allege and prove negligence. Heale v. United States, 207 F. 2d 414 (3rd Cir. 1953), same result.

NUISANCE

The very essence of nuisance is that it does not necessarily arise out of a negligent or wrongful act. The wrong in a nuisance case is usually choice of location. The tort feasor may employ the most modern methods, and conduct his affairs in a most careful manner, but this is no defense in a nuisance suit. It is difficult to see how a nuisance case could be sustained against the government. The courts are looking for some wrongful act or negligence of the type found in automobile collision cases. Nuisance sounds too much like strict liability to expect courts to invoke the Federal Tort Claims Act.

Another obstacle in the way of a successful suit against the government under the Federal Tort Claims Act is the "discretionary function" exception, as expounded in *Dalehite v. United States*.[22] In that case, the court considered the whole process of production, sale, and shipment of fertilizer to be of a discretionary nature and within the statutory exception. In *Williams v. United States*, a case sounding in trespass, a jet exploded in midair, some particles falling to the ground and damaging the plaintiff's real estate.[23] The court reasoned that since the cause of the explosion was in the nature of a military secret and could not be disclosed, the incident fell within the "discretionary function" exception.

On the basis of the *Dalehite* and *Williams'* cases, a prediction as to whether the "discretionary function" doctrine would be invoked in the *Highland Park* type case is pure conjecture, but certainly within reason.

To recover a judgment in trespass, the court will have to recognize recurring low flights to be a trespass in fact. Furthermore, there will have to be actual damages or else the recovery will be limited to nominal damages. The court will have to decide whether the nature of the tort is not within the "discretionary function" exception. The same would apply to a nuisance case, except a further obstacle, holding the government to strict liability, would enter the case.

The theory has been advanced that perhaps the United States can be enjoined from flying over one's real estate or in fact enjoined from operating an air base. Congress has not provided a procedure for enjoining the United States. The problem of sovereign immunity is the principal obstacle. In *Goltra v. Weeks*, the plaintiff sought a temporary injunction to restrain an army officer, who acting under authority of the Secretary of War, seized the plaintiff's property.[24] In that case, which is similar to what has been suggested here, the court had to either deny the suit because of sovereign immunity or allow the suit and not consider the United States a party. The court did the latter, however, dissolving the injunction by deciding the case in favor of the defendants on the merits. *Goldberg v. Daniels*, was a suit for mandamus to order the Secretary of the Navy to deliver to the plaintiff a ship.[25] Bids were solicited and plaintiff's bid, although the highest, was not accepted by the Secretary. The court there held that although the Secretary may have committed a wrongful act, the action must fail because of sovereign immunity. In *Larson v. Domestic & Foreign Corp.*,[26] an action for specific performance of a contract, the United States Supreme Court stated in discussing the problem:

> "Since we must therefore resolve the conflict in doctrine we adhere to the rule applied in the *Goldberg* case and to the principle which has been frequently repeated by this Court both before and after the *Goltra* case . . ."[27]

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[22] See note 19, *supra*.

[23] 115 F. Supp. 386 (N.D. Fla. 1953).

[24] 271 U.S. 536 (1926).

[25] 231 U.S. 218 (1913). The plaintiff in Land v. Dollar, 330 U.S. 731 (1947), sued to recover stock certificates claimed to be unlawfully held by the United States Maritime Commission. The court held that there was jurisdiction.

[26] 337 U.S. 682 (1949).

[27] *Ibid*, at page 701.

It is unlikely that a court will take jurisdiction in a suit for injunction. Even if jurisdiction was not denied, there are policy reasons for not halting the operations of an airfield. National security has become a problem of the utmost importance. Any judge must weigh this heavily.

Another unsettled issue in this field is *res judicata* or successive suits between the same parties. There is the problem of recurring trespasses; a recovery for nuisance and then additional disturbances arising; and the recovery under an easement theory and then additional disturbances arising.[28] In *Bartlett v. Grasselli Chemical Co.*, the court recognized that when public institutions are being sued for nuisance or trespass the courts allow one recovery for all time.[29] The measure of damages is the value of the property before the nuisance or trespass has begun less the value of the property once they have arisen.[30] Although there are no airplane cases on this point, there have been cases dealing with railroads, and no doubt these problems will soon arise in the field. A typical case is *Fowle v. New Haven & Northampton Co.*, wherein the defendant railroad constructed an embankment to protect its track.[31] The embankment caused flooding of the plaintiff's land. The court held that the jury in the first proceeding gave the plaintiff damages forever, considering the nuisance to be of a permanent nature. They further stated:[32]

> "As a general rule, a new action cannot be brought unless there be a new unlawful act and fresh damage."

The success of a litigant who has once recovered against the government will depend on what the court considered in the first action and whether or not the further disturbances complained of fall within the purview of the prior judgment.

CONCLUSION

The precedent established in *Causby*, magnified by the *Highland Park* case, must be very appealing to the lawyer who has a similar problem. As is pointed out, there appears to be other remedies available against the United States, however there are too many inroads leading to possible failure. If one proceeds in nuisance or trespass, there is the possibility that the court will find that under the Federal Tort Claims Act, negligence must be shown, or that the government activity was of a discretionary nature. Therefore in these cases of recurring low flights, the easement theory, while not the only alternative, is the most established in precedent, and undoubtedly will be utilized by aggrieved landowners.

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[28] Cases are not uncommon where parties successful in one suit for trespass or nuisance sue again when additional disturbances or further trespasses occur. As yet, there are no cases where the owner of the fee sues the holder of an easement for nuisance or trespass due to changes in conditions. The procedure is apparently available, and is theoretically sound.

[29] 92 W.V. 445, 115 S.E. 451 (1922). Much stated here is applicable to private as well as public law, because the courts usually consider activities of terminals and carriers to be of a quasi-governmental nature.

[30] Choctow, O. & G. R. Co. v. Drew, 37 Okla. 396, 130 P. 1149 (1913). In McLaughlin v. City of Hope, 155 S.W. 910 (1913), the court stated at p. 912, "Since the city's action in constructing its sewer system so as to turn sewage into said branch indicates an intention to acquire a permanent right to continue to so use it and pollute the stream, the damages to the owner should be assessed upon that basis and as though the city were proceeding to acquire it under its power of eminent domain."

[31] 112 Mass. 334 (1873).

[32] *Ibid*, page 338.

RECENT ADDRESS[1]

LOGISTICS REQUIREMENTS

By Dr. Allen R. Ferguson

Director of Research, The Transportation Center, Northwestern University

General Henebry, Ladies and Gentlemen:

I feel honored to share this morning's Air Force Reserve Session with so distinguished a list of speakers and panelists.

My subject is "Logistics Requirements," but to talk in a meaningful way for twenty-five minutes, it is necessary to narrow the field severely. Consequently, I shall concentrate upon only one aspect of Air Force logistics, namely, Airlift.

This is done not out of any notion that Airlift is the only or the most important part of Air Force logistics, but because time requires concentration and because many reserve activities are intimately connected with airlift.

In these remarks I propose to touch upon three things: First, some general characteristics of war-time logistics requirements; second, the implication of these characteristics for airlift in peace time; and third, I shall throw out a suggested means of more nearly fulfilling our airlift requirement.

To begin, then, some general comments about logistics requirements. Here I wish to make two points. First, logistics requirements in war-time are uncertain. More bluntly, we do not know what they will be. I would argue that no one can know and that no one should hesitate to admit that fact.

Obviously, the greatest of the uncertainties is to what extent the Air Force should prepare for a central, nuclear war as compared with a limited war. There is a serious conflict here: The logistics posture suitable for one is not ideal for the other. For example, in the central war, individual combat units should, at least early in the conflict, be able to rely entirely upon logistics support at hand; off-base support may be most difficult and unreliable. At the same time, it appears that surface forces in the earliest phases may not be critical, and they may not even play any important role until the issue is decided, and decided largely by the strategic air strength of the major powers.

In a limited or local or peripheral war or emergency, quite the opposite is true. The great weapons held in readiness to wage or, better, to deter World War III may, in fact, stand-down during the limited conflicts, while the tactical Air Forces, the Army, and the Naval Surface Forces will be committed as early as possible in various degrees, perhaps fully. These will be the forces requiring logistics support, specifically, they will require airlift for, at least, some of their deployment and resupply.

There are other elements of uncertainty. When and where will the next emergency arise? What weapons, what forces will be employed? With these major uncertainties about the kind of combat to be supported, computation of the tons of POL or of numbers of aircraft engines become rather complex. So, too, does the computation of airlift requirements. It is quite unrealistic to suppose that the Air Force or the Department of Defense can develop a single war-time airlift requirement. This is a fact of life with which the military and the public must learn to live.

[1] At the National Convention of the Air Force Association's Reserve Forces Seminar and Workshop, September 25, 1958, Dallas Texas.

Now, a second major characteristic of logistics requirements: Uncertain as the future is, there is some reason to think that the most likely war-need is for support in limited conflicts. In recent months we have seen the Quemoy crisis and a major crisis in the Near East. Before them, Suez, Hungary, Indo-China, and Korea. Half a dozen major crises with actual or potential local fighting since World War II.

Unless we are to run considerable risk of losing in the end by being unable to fight effectively in limited wars, the Air Force must be able to support its own forces and those of the army in local conflicts.

Let me hasten to add two things: One, it seems clear that it is largely because of the deterrent effect of the Strategic Air Command that the local wars are more likely than general war. Two, consequently, the Air Force logistics system must as first priority provide adequate logistics support for the deterrent forces.

So far I have said only two things: namely, that logistics requirements can never be even approximately accurate (and we must learn to live with that fact); and secondly, that, while retaining the deterrence capability, the Air Force must be able to provide in limited conflicts complete logistics support for tactical air and airlift support for the Army and Navy.

What are the implications of these rather obvious points for peacetime airlift activity? First, it seems clear—although I have yet to see it proven—that speed in response may be critical in a local emergency. The preponderance of enemy ground forces in numbers appears to indicate that unless we react fast, the possibility of defeat in the local area is extremely great. Any movements of troops, equipment and supplies require enormous cargo tonnages. The fact that we are uncertain as to where the next emergency will occur means we must have ability to deploy—forward or laterally. These facts all point to a requirement that large air cargo capacity be available to the military. Since we are uncertain also as to when an emergency will arise, airlift must be kept continuously at a high state of readiness. This is costly. The reserve components and CRAF provide some means of keeping at moderate cost an ability to expand.

Do we have the required capacity?

There is good reason to believe that the quantity of airlift available for the war-time job may be inadequate. For example, in hearings last spring, Secretary Sharp stated[2] in part: "Recent JCS estimates of emergency airlift requirements show a steadily rising trend. The deficits * * * are primarily in cargo airlift. * * * Today's emergency airlift requirements must be met with today's resources, and the combined military and civilian cargo fleets fall short of the mark."

Further, it seems clear that there is a great need to modernize the military air transport fleet. There are at present only two turbine-powered aircraft in logistics use, the C-130 and the C-133. The great preponderance of the MATS fleet consists of piston-powered equipment. There appears to be wide agreement that modernizing is desirable both for reasons of military effectiveness and for economy. A few months ago, during the same hearings, Senator Symington stated[3] that ". . . We are building only 1¼ C-133's a month. That is the total of modern strategic airlift airplanes in the United States. Despite our commitments all over the world, we have only 16 modern airlift airplanes for military purposes. . . ."

To be ready to handle the tonnages required over the great distances involved in wars around the Communist perimeter, piston aircraft simply

[2] Hearings before the Subcommittee of the Committee on Appropriations, U. S. Senate, 85th Congress, 2nd Session, *Department of Defense Appropriations for 1959; p. 1178.*

[3] *Ibid.*, p. 1171.

are not efficient. The cost per year in money and man power of maintaining any high level of ready airlift capability can be reduced through modernization. So far as I know there is little or no argument against this proposition. Why is not the modernization carried out, and why are the economies not realized?

It appears that there are two main reasons; first, that it is difficult to dispose of the existing fleet of piston aircraft; and, second, that to achieve the savings in operating costs in future years requires very large investment now. The remainder of these remarks will deal with the second problem.

Here is the problem: The MATS operation—providing continuous readiness to perform large-scale war-time airlift—can be performed more economically in new turbine-powered equipment of the right kind than it can be with the present fleet. However, these economies require that new investments in aircraft (and facilities) be made now, or in the near future, to achieve savings in the more distant future. One reason why the problem is severe is that modernization will take a period of years. During these years, the economies of operation will be building up, but the investment in new equipment will more than offset them so that at first the total airlift budget will increase rather than decrease. The situation poses very practical subproblems:

1. To achieve a future economy, the present overall budget must be increased,
2. That increase competes directly with the procurement of weapons,
3. The need for transports is less obvious than the need for bombers, and
4. It involves asking Congress and the Executive to appropriate or approve funds whose benefits (reduced budgets) will be reaped by their successors.

This appropriations hurdle has been one of the really significant barriers to modernization.

If some method could be found to permit net economies to appear in the first year or two of the modernization program, and especially if this could be done without requiring that the procurement of transports be at the expense of the procurement of weapons, a major obstacle to badly needed modernization could be overcome.

I would like to throw out one tentative proposal for achieving this.[4] The proposal is simply that the Air Force lease rather than buy transports. The opposite is a reasonably common practice, namely, for the Air Force to lease Air Force-owned transports to operators. This proposal would involve the Air Force's entering into a contract for a private company to purchase modern transports and to rent them to the Air Force under agreed conditions and at agreed rental rates. It would be the responsibility of the lessor to raise the necessary funds, say in the capital market, to finance the initial investment.

Such a contractual arrangement could take many forms. In the recent House Appropriations hearings,[5] Resort Airlines proposed one form. The contract could, for example, require only that the lessor furnish a complete aircraft, deliver it to the Air Force at the beginning of its life and recover it some years in the future. At the other extreme, a lessor could enter into a contract to furnish the Air Force with some specified number of good flying hours, with the lessor providing all maintenance and other logistics support

[4] I believe that this idea was first suggested to me a year or so ago in conversation by Mr. Charles J. Hitch, Chief of the Economics Division, The Rand Corp., Santa Monica, California.

[5] Hearings before the Subcommittee of the Committee on Appropriations, House of Representatives, Eighty-fifth Congress, Second Session, *Department of Defense Appropriations for 1959, p. 814.*

including, perhaps, servicing at the home station. Intermediate types of agreements, such as one which calls for the contractor to perform major maintenance but for the Air Force to provide line maintenance and all servicing, might be considered. The purpose here is not to spell out the details of the contractual arrangements, but simply to explore the idea briefly.

Now let us consider the practicality of such a concept. I shall ignore its "politics" and concentrate on a few substantive points. In order for the scheme to be practical, at least these conditions must be fulfilled:

1. A mutually advantageous rental charge must be devised and agreed upon;
2. The lessor must have sufficient financial security over the life of the aircraft to make it worth his while to invest in the equipment;
3. The contractual arrangements must be sufficiently flexible to cope with changes through the life of the aircraft; and
4. The costs of development and tooling must be handled in a suitable manner.

Let us consider each condition in turn. First, a mutually advantageous rental must be agreed upon. Since modernization will presumably decrease the cost of operating a high level of war-ready airlift capacity, it should be possible to compute a rental which would be less than the cost of operating the existing piston fleet and still be enough to provide an adequate return to the lessor.

Second, adequate financial security for the lessor: Even with an adequate annual return, the contractor must have some assurance that the government will continue to lease long enough for him to recover at least a substantial portion of his investment as well as a return on his capital. Unless he has this or equivalent security, it is unrealistic to expect him to be able to finance the investment in a fleet of modern transports. The simplest arrangement would be for the government to enter into an agreement to lease the equipment for a period of several years. Under present law, or at least under present practice, this may not be feasible. However, the government does lease buildings and other facilities for long periods. Also, if the advantages of such lease arrangements are great enough, there is some possibility that the necessary legislative or policy changes can be made.

Third, the need for flexibility: At the beginning of this discussion, I pointed out the need for some kinds of flexibility in logistics planning. In these lease, too, it would be desirable for the Air Force to be in a position to adjust to technological and military change. Clearly it should be possible to expand the fleet; this seems to be simple. Adjustments in contractual services would obviously have to be made by new negotiations. Reduction in or termination of contracts could, apparently, be covered by adequate liquidated damages clauses in the original contracts.

Fourth, the costs of development and tooling: It is unreasonable to expect the lessor to incur the costs of development and tooling for any transport primarily of military value. Further, if any one contractor should do so, the flexibility of the government in dealing with several lessors would be impaired. It appears that the government could, as is present practice, pay for the development of military transports. Also, it could purchase the first few production aircraft—say five or six—for operational testing and possibly for special purpose in this way covering the bulk of the tooling costs.

Undoubtedly, in attempting to put such a policy actually into effect, administrative problems would be encountered, but a superficial check does not indicate that there are any major hurdles. What then would be the advantages of such a policy?

If it is practical, the leasing arrangement would appear to make the expansion as well as the modernization of the transport fleet easier in terms of legislative and budget barriers. First, during a program of modernizing and/or expanding airlift capability, fewer funds would be needed for transports than would be the case under the present procurement policies. Furthermore, as soon as the economies of modernization begin to be realized, the total airlift budget would tend to be reduced. That is, the savings would show up as reduced annual budget requirements much earlier than under the present system. Thus Congress and the Executive would not be asked to make large investments whose benefits would accrue to distant successors. Third, because the annual cost of modernization would be less in the early years of a program, there would be less competition between transports and weapons for funds.

In addition to these administrative and budgetary advantages within the government, there may be some important advantages to industry in such a policy. To the extent that it would in fact result in some additional procurement of transport aircraft, it would tend to lessen those pressures on the aircraft manufacturers to which Dr. Paul Cherington refers in his recent report on the financial problems of the airlines. Such considerations might make a policy of this sort particularly timely. However, the passenger-type transports now in production for the airlines may not be appropriate as logistics aircraft.

Lastly, the further development by the military of efficient cargo aircraft and experience in their operation promises to benefit the aviation industry as a whole. In this context, it may be well to mention that there may be some conisderable advantage in having military logistics carriers certificatable as civil transport aircraft.

The Air Force must have large amounts of cargo airlift capability both to provide for the support of local conflicts which are likely to arise in the coming decades and to provide the general logistics flexibility needed to cope with the uncertainty of logistics requirements. The budgetary and financial barriers to expansion and especially to modernization of the airlift fleet can perhaps be overcome in large measure by the renting of transports from private contractors. At least the possibility of doing so seems to warrant thorough examination.

DIGEST OF RECENT CASES

AIRCRAFT MANUFACTURER'S LIABILITY TO AIR CARRIER — STATUTE OF LIMITATIONS

Northwest Airlines v. Martin

5 CCH Aviation L. Rep. 18,069 (F. Supp., D.C. Md. 1958)

An action for indemnity was commenced by an air carrier against the manufacturer of a plane which crashed due to negligent and defective construction. The court applied the law of Wisconsin since the accident occurred there and held that an action for indemnity or contribution started nine years after the accident but only two years after the last settlement of liability is not beyond the three years statute of limitations. Prior to settlement the plaintiff's rights are inchoate but upon payment these rights ripen into a cause of action.

TARIFFS OF AIR CARRIERS — LIMITATIONS OF LIABILITY — EXCESS VALUATION CHARGES

Tannenbaum v. National Airlines

5 CCH Aviation L. Rep. 18,136 (N.Y.S. 2d, June 1958).

Provisions in air carrier tariffs that limited liability for baggage carried in interstate commerce and checked on air line tickets are valid—even though excess valuation may be declared and additional payments made pursuant thereto, as long as the tariffs have been filed with the Civil Aeronautics Board as required in the Civil Aeronautics Act. Further held that it is not necessary for the carrier to specifically call the limitation to the attention of the passenger regardless of whether the action is one sounding in negligence, conversion, or breach of a bailment contract.

CIVIL AIR PATROL — CHARITABLE CORPORATION — IMMUNITY FROM LIABILITY FOR ACTS OF EMPLOYEES

Hooten v. Civil Air Patrol

5 CCH Aviation L. Rep. 18,113 (E.D. Wis. Apr. 29, 1958)

A child injured as the result of negligence by Civil Air Patrol employees was denied recovery in a state where charitable corporations are immune from suit. The Act of Congress which set up the Civil Air Patrol has been interpreted to provide that the agency shall be of a benevolent character and a non-profit corporation. Under applicable state law, charitable corporations are not liable under *respondeat superior* for the negligence of their servants. Furthermore, the Federal Torts Claims Act is inapplicable, since it provides for liability only if, under like circumstances, a private citizen would be liable.

BIBLIOGRAPHY

CURRENT LITERATURE ON AVIATION

BOOKS AND PAMPHLETS

THE AEROPLANE DIRECTORY OF BRITISH AVIATION. 1958 ed. London, Temple Press, Ltd., 1958. 613p. $4.20.

AIR TRAVELER'S DESTINATION DIRECTORY. Vol. 1, No. 1, June 1958. Washington, American Aviation Publications, 1958. 1 v. $6.00.
To be issued semi-annually.

AVIATION DIRECTORY OF CANADA. Toronto, Aircraft, 1958. $5.00.

Cherington, Paul W. THE STATUS AND SIGNIFICANCE OF THE AIRLINE EQUIPMENT INVESTMENT PROGRAM, June 30, 1958. A Report Prepared for the President's Special Assistant for Aviation. Washington, The White House, 1958. 44p.

Convair. POSTWAR GROWTH OF COMMERCIAL AIR TRANSPORT IN THE FREE WORLD. San Diego, Convair, 1958. 80p. (*Its* Report SE 265-2)

Great Britain. Air Transport Advisory Council. REPORT FOR THE YEAR ENDED 31ST MARCH 1958, AND STATEMENT BY THE MINISTER OF TRANSPORT AND CIVIL AVIATION. London, Her Majesty's Stationery Off., 1958. 66p. $ .25.

Institut Français de Transport Aérien. LES TRANSPORTS FERROVIAIRES ET LES TRANSPORTS AERIENS DES ETATS-UNIS AUX PRISES AVEC L'INFLATION ET LA RECESSION. Paris, Institut Français de Transport Aérien, 1958. 30p. (*Its* Note d'information, no. 144)

International Civil Aviation Organization. THE ECONOMIC IMPLICATIONS OF THE INTRODUCTION INTO SERVICE OF LONG-RANGE JET AIRCRAFT. Montreal, International Civil Aviation Organization, 1958. 66p. $1.25.

International Civil Aviation Organization. FINANCIAL DATA, 1956. Montreal, International Civil Aviation Organization, 1958. 58p. (*Its* Digest of Statistics No. 66A, Series F-10A) $ .75.

International Civil Aviation Organization. INDEX OF ICAO PUBLICATIONS. Cumulated edition 1956. Montreal, International Civil Aviation Organization, 1958. 237p. $6.00.

International Civil Aviation Organization. PROCEEDINGS OF THE ROUTE FACILITIES CHARGES CONFERENCE, 18 MARCH-1 APRIL 1958. Vol. 1. Report and Working Papers of the Conference. Montreal, International Civil Aviation Organization, 1958. 133p. $2.00.

International Civil Aviation Organization. TRAFFIC FLOW—SEPTEMBER 1956. Montreal, International Civil Aviation Organization, 1958. 339p. (*Its* Digest of Statistics No. 68, Series TF-20) $3.75.

Knauth, Arnold W. STATUS OF AIRCRAFT WITH REFERENCE TO CRIMINAL LAW FOR AIRCRAFT. Report, Case Materials, Draft Texts. New York, International Law Association, 1958. 29p.
Contributed by the author as rapporteur at the New York University Conference, September 1958, of the International Law Association.

Pépin, Eugène. L'ENSEIGNEMENT DU DROIT AERIEN DANS LE MONDE. Montreal, McGill University, 1958. 33p. (Institute of International Law Publication No. 5)

Philippines. Civil Aeronautics Administration. PHILIPPINE AVIATION ANNUAL & DIRECTORY, 1957-58. Edited by P. C. Morantte. Manila, 1958. 108p.

Porch, Harriet E. RUSSIAN COMMERCIAL AVIATION—FRIEND OR FOE? A Research Report Including Data on Aeroflot's Operations and Intentions. Denver, The Author, 3221 East 33rd Avenue, 1958. 147p.

Port of New York Authority. Aviation Department. NEW YORK'S OVERSEAS AIR TRAVELERS. Report of a One Year Survey Conducted in Collaboration with the Overseas Scheduled Airlines, April 1956 through March 1957. New York, Port of New York Authority, 1958. 135p.

Savoia, Cesare. L'AVIAZIONE CIVILE—QUESTIONI GIURIDICHE DI ATTUALITA. Rome, Editore dr. A. Giuffrè, 1958. 159p. 1,000 lire

The Story of USAIG, AMERICA'S FIRST AIRCRAFT INSURANCE GROUP. New York, United States Aviation Underwriters, Inc., 1958. 24p.

U. S. Civil Aeronautics Board. AIRPORT ACTIVITY STATISTICS OF THE CERTIFICATED AIR CARRIERS, TWELVE MONTHS ENDING JUNE 30, 1957. Washington, Research and Economics Department, Air Transport Association of America, 1958. 68p. $10.00.

U. S. Civil Aeronautics Board. ORIGINATION-DESTINATION AIRLINE REVENUE PASSENGER SURVEY. September 17-30, 1957. Washington, Airline Finance and Accounting Conference, Air Transport Association of America, 1958. 4 v. $50.00.

U. S. Congress. House. Committee on Interstate and Foreign Commerce. AIR CARGO CARRIERS CERTIFICATION. Hearings . . . on S. 1474, April 17, 1958. Washington, U. S. Govt. Print. Off., 1958. 61p.

U. S. Congress. House. Committee on Interstate and Foreign Commerce. Subcommittee on Transportation and Communications. CIVIL PENALTIES. Hearings . . . April 22, 1958, on H. R. 8703 and Other Bills Regarding the Imposition of Civil Penalties for Violation of the Civil Aeronautics Act. Washington, U. S. Govt. Print. Off., 1958. 41p.

U. S. Congress. Senate. Committee on Interstate and Foreign Commerce. AMENDMENTS TO THE FEDERAL AIRPORT ACT. Report, May 13, 1958, to Accompany S. 3502. Washington, U. S. Govt. Print. Off., 1958. 28p. (85th Congress. 2nd Session. Senate Report No. 1556.)

UNITED STATES CIVIL AND MILITARY AIRCRAFT FOR 1958. Wichita, Kans., The Robert R. Longo Co., Inc., 1958. 230p. $2.95.

WHITE'S AIR DIRECTORY AND WHO'S WHO IN NEW ZEALAND AVIATION. No. 9. Auckland, White's Aviation, Ltd., P. O. Box 2040, 1958. 152p. 11s.

WHO'S WHO IN WORLD AVIATION AND ASTRONAUTICS. Vol. 2, 1958. Washington, American Aviation Publications, Inc., 1958. 497p. $12.50.

Zadorozhnyi, B. THE ARTIFICIAL SATELLITE AND INTERNATIONAL LAW. Translated by Anne M. Jones. Santa Monica, Calif., The Rand Corporation, 1958. (Rand Translation T-78)

PERIODICAL ARTICLES

Air Transportation—U.S.A. Interavia; Review of World Aviation, Aug. 1958; 13: 787-798.

Series of five articles including "The United States Airline's Challenge," by Stuart G. Tipton.

Alaska's Airlines. Esso Air World, May/June 1958; 10: 142-146.

All-Cargo Airlines Call for Help, by John H. Frederick. Distribution Age, Sept. 1958; 57: 31, 79.

Anarchy in Space? World Today, Sept. 1958; 14: 390-398.

Basic Problems in Metalaw, by Kenneth H. York. Brief, Summer 1958; 53: 243-247.

Bulgarian Civil Aviation, by Ivan Sipkov. Highlights of Current Legislative and Activities in Mid-Europe, Mar. 1958; 6: 103-111.

Civil Aviation: 1958. Aircraft, July 1958; 20: 22-24, 27-28.

Competition in Canadian Civil Aviation, by D. R. Ladd. Business Quarterly (School of Business Administration, University of Western Ontario), Summer 1958; 23: 86-91.

The Control of Air Traffic; Its Origin, Development, and Future Requirements, by W. E. G. Mann. Institute of Transport Journal, May 1958; 27: 309-323.

Effective Control as Related to the Extension of Sovereignty in Space, by H. B. Jacobini. Journal of Public Law, Spring 1958; 7: 97-119.

Emerging Problems of the Airlines, by Allen M. Smythe. Magazine of Wall Street, Sept. 18, 1958; 102: 663-665, 709-710.

How IATA Curbs the Maverick Lines, by Robert Burkhardt. American Aviation, Sept. 8, 1958; 22: 57-59.

How Low May Airplanes Fly? American City, Sept. 1958; 73: 157-158.

Landowners' Rights in the Air Age; the Airport Dilemma, by William B. Harvey. Michigan Law Review, June 1958; 56: 1313-1332.

Law and Lawyers in Space, by N. Katzenbach. Bulletin of Atomic Scientists, June 1958; 14: 220-224.

Law and the Conquest of Space, by Kenneth B. Keating. New York State Bar Association Bulletin, Feb. 1958; 11: 72-80.

Law and Upper Space: a Symposium. St. Louis University Law Journal, Spring 1958; 5: 1-133.

Includes "Law and the Age of Space," by Andrew G. Haley; "Air Law and Space," by Welf Heinrich Prince of Hanover; "Principles of International Law in Spaceflight," by Cyril E. S. Horsford; and a "Guide to the Study of Space, Including a Selective Bibliography on the Legal and Political Aspects of Space," by John C. Hogan.

Law of Outer Space—a Problem for International Agreement, by Andrew G. Haley. American University Law Review, June 1958; 7: 70-77.

Law of Outer Space—Some Hypothetical Problems, by Milton Cerny. American University Law Review, June 1958; 7: 98-102.

Let's Look at Airlift, by Donald W. Douglas. National Defense Transportation, May/June 1958; 14: 38-42, 72.

Liability of Airlines for Injuries to Passengers, by Lawrence R. Booth. Southern California Law Review, Apr. 1958; 31: 319-333.

Major Aspects of the Problems of Outer Space, by Loftus Becker, U. S. Dept. of State Bulletin, June 9, 1958; 38: 962-967.

Management, Unionism, and Public Policy of the Railroads and the Airlines, by Ernest Dale and Robert L. Raimon. Industrial and Labor Relations Review, July 1958; 11: 551-571.

Mid-Air Collisions, by S. J. Gerathewohl. Interavia; Review of World Aviation, Aug. 1958; 13: 823-824.

Perspectives for a Law of Space, by Myers S. McDougal and Leon Lipson. American Journal of International Law, July 1958; 52: 407-431.

The Place of VTOL and STOL in Civil Transport, by F. H. Robertson. Aeronautics, Sept. 1958; 39: 185-196.

Preview of Space Law Problems. Organize on this Planet or Perish, by K. Rao. *Warning; Early Unilateral Positions*, by O. Schachter. New York County Lawyers Association Bar Bulletin, June 1958; 16: 30.

Salute Delta Air Lines. Airlanes, July 1958; 23: 10-40.
Special issue commemorating thirty years of service by Delta Air Lines.

Sound Barrier Shock-Waves. Solicitors' Journal, July 26, 1958; 102: 537-538.

Sources of Private International Air Law, by Julian G. Verplaetse. International & Comparative Law Quarterly, July 1958; 7: 405-416.

Soviet Air Transport, by George Kish. Geographical Review, July 1958; 48: 309-320.

Special Theme Supplement—Airports and Ground Support. American Aviation, Sept. 22, 1958; 22: 25-45.

Tomorrow's Transports and Their Ground Equipment. Aeronautics, Aug. 1958; 38: 42-44.

Towards Controls in Space, by Michael Aaronson. Law Times, July 18, 1958; 226: 30-31.

Who Owns Outer Space? by R. Bendiner. Reporter, June 12, 1958; 18: 17-20.

FOREIGN ARTICLES

Diritto spaziale o astronautico, di Amedeo Giannini. Rivista aeronautica, Sept. 1958; 34: 1293-1302.

Einige Anmerkungen zum Tokioter Entwurf eines Abkommens zur Vereinheitlichung von Regeln über die von einem anderen als dem vertragschliessenden Luftfrachtführer ausgeführte internationale Luftbeförderung, von Günther Becker. Zeitschrift für Luftrecht, No. 3, 1958; 7: 313-321.

Fisionomia dell'aerostazione nei grandi aeroporti per linee aeree civili, di Franco Ciacchella. Rivista aeronautica, Aug. 1958; 34: 1163-1175.

Haftungssystem und Haftungsgrenzen im nationalen und internationalen Luftrecht, von Gerd Rinck. Zeitschrift für Luftrecht, No. 3, 1958; 7: 298-312.

International privatliche Probleme auf dem Gebiet des Luftrechts, von Otto Riese. Zeitschrift für Luftrecht, No. 3, 1958; 7: 271-297.

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